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Adolescent pregnancy rates are particularly high in the southern states posing a critical area for nursing intervention. The effect of the nurse home visitor social support intervention on decision-making for parenting adolescents has not been documented within the healthcare literature. Lack of information on the nurse home visitor social support intervention's efficacy is a serious gap in the knowledge base. The Nurse-Family Partnership, a health promotion program utilizing nurse home visitation for first time mothers, has been described in the literature as effective in improving health outcomes and self-sufficiency of the participants in the program, but this study will assess areas that have not been addressed by previous Nurse-Family Partnership research. The purpose of this quantitative cross-sectional study was to describe the decision-making behaviors of parenting adolescents enrolled in the Nurse-Family Partnership and to explore predictive variables that may have influenced their decision-making behaviors within the context of decision-making behaviors, social support, and everyday chronic stressors.

Using the Adolescent Decision Making Questionnaire, Norbeck's Social Support Questionnaire, Adolescent Demographic Questionnaire and the Everyday Stressors Index, decision-making behaviors, social support, demographic variables and everyday stressors were measured in the population of parenting adolescents enrolled in the Nurse-Family Partnership. The setting for the study was North Carolina. Using convenience

sampling, a sample size of 38 adolescents was recruited. Conceptually, the study was guided by Norbeck's social support model.

Results included that a large percentage (68.4%) of the adolescents in the study reported that the nurse home visitor was a source of social support. Additionally, for each grade level completed, there was a 1.009 significant increase in the predicted mean score for the self-esteem subscale on the Adolescent Decision Making Questionnaire. When comparing Hispanics/Latinos versus White participants, Hispanics/Latinos had significantly less social support aid than Whites. Conversely, Hispanics/Latinos had significantly higher levels of nurse home visitor emotional support and nurse home visitor total function scores when compared to Whites. The outcomes of this project were assessment of specific aspects of the Nurse-Family Partnership model, empirical evidence to support the establishment and funding of the Nurse-Family Partnership in new areas of the United States and additions to the body of nursing science related to adolescent decision-making.

DECISION-MAKING BEHAVIORS FOR ADOLESCENT MOTHERS
ENROLLED IN THE NURSE-FAMILY PARTNERSHIP

by

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Approved by

Committee Chair

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To my Parents, who have believed in me throughout every step of my journey

In memory of Dr. Darlene Street, one of UNCG's finest

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of
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CHAPTER I

OVERVIEW

The United States (US) ranks first among industrialized countries with the highest adolescent pregnancy rates (Alford & Hauser, 2009; Hamilton, Martin, & Ventura, 2010; “Health statistics: Teenage pregnancy (per capita) (most recent) by country,” 2010), despite an encouraging downward trend between 1991 and 2005 (Alford & Hauser, 2009; Hamilton, Martin, & Ventura, 2009; Martin et al., 2009; Martin et al., 2007; Ventura, Abma, Mosher, & Henshaw, 2007). A recent analysis by Finer (2010) compared pregnancy statistics and found that of all the women who were sexually active, those between the ages of 15 and 19 had the highest pregnancy rates. Moreover, adolescent pregnancy rates are notably higher than the national average in the South and Southwest US. Importantly, for North Carolina (NC) the rates are higher than the national average (Martin et al., 2009; Martin et al., 2007; The National Campaign to Prevent Teen and Unplanned Pregnancy, 2010). It has also been estimated that almost half of all adolescents in the US have had sexual intercourse and are more likely to engage in risky behaviors than other age groups (Abma, Martinez, Mosher, & Dawson, 2004; Centers for Disease Control and Prevention, 2012b; Guttmacher Institute, 2010). Thus, adolescents’ choices to participate in risky decision-making behaviors may contribute to the growing number of adolescent mothers, thereby escalating the phenomenon of adolescent mothers and children with poor health outcomes.

The increases in adolescent pregnancy prevalence and adolescents' participation in sexual intercourse are significant public health concerns because infants born to adolescent mothers are at risk for poor birth outcomes (Florida State University Center for Prevention and Early Intervention Policy, 2005). An examination and description of the general decision-making processes of adolescents who are parenting is a first step in prevention of adolescent pregnancy. Decision-making for adolescents is increasingly important because this age group is gaining autonomy and encountering more choices without adult assistance at increasing rates as compared to younger children (Building Partnerships for Youth, 2009). This level of increased decision-making not only affects outcomes for the adolescent but often affects outcomes for other individuals; in this case, the children of parenting adolescents.

Additionally, such an exploration is a critical component of the assessment of existing health promotion programs for adolescent mothers and their children. Successful implementation of adolescent pregnancy prevention strategies is dependent on an understanding of the decision-making process as adolescents experience it. More specifically, insight into adolescent decision-making is essential to assessing participant outcomes outside of the initial goals of the Nurse-Family Partnership (NFP).

Nurse-Family Partnership

Overview

The NFP is a nurse home visitation health promotion program that focuses on low-income, first-time mothers of all ages. The goals of the NFP are to improve health outcomes for the mother and the child, enhance child development, and assist in

establishing self-sufficiency for the family (Nurse-Family Partnership, 2011c, 2011j).

While the goals of the NFP do not clearly specify decision-making behaviors, these behaviors may be directly related to health outcomes, child development, and self-sufficiency, and therefore should be explored.

Enrollment in the NFP takes place prior to the 28th week of pregnancy, but can be as early as 12 weeks gestation and continues to the child's second birthday (Nurse-Family Partnership, 2011d). Originally conceptualized by Dr. David Olds in the 1970's, the program has grown from a dream to a national non-profit organization (A. Goodman, 2006). Currently, Olds is the director of the Prevention Research Center for Family and Child Health (The Regents of the University of Colorado, 2012). His establishment of the NFP has benefited a multitude of families and their children; currently, there are 21,727 families enrolled in the NFP within 37 states and 426 counties (Nurse-Family Partnership, 2012a). Since the NFP's formal creation in 1996, 150,941 families have received their services (Nurse-Family Partnership, 2012a).

In the US, the median age of participants enrolled in the NFP is 19 years of age and 85% of the participants are unmarried (Nurse-Family Partnership, 2011f). For families enrolled in the NFP, the annual average income is \$16,000 and only approximately 44% have completed a high school education (Nurse-Family Partnership, 2011f). In 2003, the NFP was expanded to the NFP National Service Office to facilitate fidelity to the model and quality replicated NFP programs (Nurse-Family Partnership, 2011h). The program provides critical knowledge and skills in an intensive and comprehensive format to assist first-time mothers with the ability to procure resources for

themselves and their child while concurrently enhancing the mothers' self-esteem and self-sufficiency.

While decision-making is not an intentional goal of the NFP, increased positive decision-making behaviors have been associated with cultural and socio-economic factors (Gordon, 1996), increased knowledge about decision-making behaviors or risky behaviors, social and self-regulation skills, and coping strategies (Fischhoff, Crowell, & Kipke, 1999). Therefore it is possible that the NFP does in fact improve decision-making due to the strong focus on self-esteem, self-sufficiency, and intensive education related to maternal/child concerns and behaviors despite that the NFP does not specifically address decision-making in its aims and goals. This merits further research related to adolescent decision-making as it relates to social support, environmental stressors, and demographic variables.

Research

Empirical research has demonstrated short and long-term positive health, academic, and societal outcomes for mothers and their children enrolled in the NFP (Eckenrode et al., 2010; Kitzman, Olds, & Henderson, 1998; Olds et al., 1997; Olds et al., 1998; Olds, Henderson, Tatelbaum, & Chamberlin, 1986; Olds, Kitzman et al., 2004; Olds et al., 2007; Olds, Robinson et al., 2004). The program participants have also demonstrated significantly longer periods of time between pregnancies as compared to the average for adolescent mothers (Olds, Robinson et al., 2004). Researchers have not specifically explored decision-making behaviors in adolescents enrolled in the NFP, although two longitudinal studies (Eckenrode et al., 2010; Olds et al., 1998) have

demonstrated outcomes associated with improved health and decision-making behaviors by children of mothers enrolled in the NFP. In one study, children at age 15 demonstrated positive decision-making behaviors as evidenced by decreased cigarette and alcohol consumption (Olds et al., 1998). Eckenrode and colleagues (2010) also indicated that female children of mothers enrolled in the NFP had fewer antisocial decision-making behaviors such as decreased arrests and convictions.

These outcomes indicate the NFP may positively influence decision-making among multiple generations. Thus, these outcomes are compelling evidence for documentation of decision-making behaviors and exploration of predictive relationships between the nurse home visitor support and decision-making behaviors. The principal investigator (PI) for this study has focused on adolescent mothers enrolled in the NFP due to the higher rates of risky decision-making behaviors as compared to adults, the poor health outcomes associated with adolescent pregnancies, and the high prevalence of adolescent pregnancies in the southern US (Finer, 2010; Florida State University Center for Prevention and Early Intervention Policy, 2005). Additionally, further research could potentially benefit the NFP organization because expanded implementation of the NFP and funding decisions are predicated on empirical outcome data.

The NFP has a rigid intervention model, utilizing 64 scheduled home visits by a specific assigned Registered Nurse to build a supportive relationship between the client and the nurse during the participant's pregnancy through the second birthday of the child (Nurse-Family Partnership, 2011d, 2011f). The relationship that is established has a multidimensional focus with social support as a fundamental construct of the NFP

(Nurse-Family Partnership, 2011e). Therefore, Norbeck's model of social support was utilized as the guiding orientation for this study. According to Norbeck's (1981) model of social support, adequate or inadequate social support directly impacts the likelihood of positive or negative outcomes (Norbeck, 1981).

A quantitative cross-sectional study was used to address the gap in the literature for decision-making behaviors for adolescent mothers enrolled in the NFP. The PI described decision-making behaviors and explored predictive variables that influenced decision-making behaviors of parenting adolescents enrolled in the NFP. Decision-making behaviors, social support, demographic variables, and everyday stressors reported by parenting adolescents were explored. Furthermore, the PI assessed the participants' perceived levels of nurse home visitor social support as a variable in the model to determine if relationships existed among decision-making behaviors and nurses' social support. It was critical to examine the social support provided by the nurse in promotion of positive decision-making behaviors, which may ultimately impact the adolescent in all future endeavors. Participants in the study were asked to complete survey instruments to rate the social support provided by others including the NFP nurse home visitor.

Purpose

The purpose of the study was to describe the decision-making behaviors of parenting adolescent females enrolled in the NFP and to explore predictive variables such as demographics, social support, and everyday stressors that may influence these decision-making behaviors. Additionally, this study assessed the adolescents' perceived levels of social support of the nurse home visitor.

Conceptual Model

The conceptual model guiding this study was derived from Jane Norbeck's model of social support (Norbeck, 1981). Increased social support has been reported by low-income mothers as a result of their relationships with nurse home visitors (Olds, Henderson, Tatelbaum, & Chamberlin, 1986) or health program advocates (Becker, Kovach, & Gronseth, 2004), and linked to race and ethnicity (Rodriguez & Moore, 1995). Support and relationships also have been identified as attributes in the concept analyses for adolescent decision-making (Commendador, 2003) and sexual decision-making behaviors for adolescents (Fantasia, 2008).

Social Support

The concept of social support and the associated theories focus on relationship and interactions among individuals or groups (Peterson & Bredow, 2004). Some social support is linked to health in areas such as services, outcomes, statuses, and behaviors (M. Stewart, 1993). The belief that social support may impact health began with one of the earliest social support theorists (Cassel, 1974). Social support is both multidimensional and multidisciplinary and has been defined by many theories and perspectives (M. Stewart), although there is a lack of consensus regarding the conceptualization of social support creating conflict with comparisons and generalizability among findings from research studies (Peterson & Bredow, 2004; Vangelisti, 2009). Definitions of social support vary widely and have included (M. Stewart): (a) social interactions and groups which impact resources and coping mechanisms (Caplan, 1974), (b) information and provision of care, love, self-esteem,

value, and group identity (Cobb, 1976), (c) interactions that involve exchange of positive affect, resources, and affirmation (Kahn, 1979; Kahn & Antonucci, 1980a), (d) informational, and tangible support (Schaefer, Coyne, & Lazarus, 1982), (e) resources (Cohen & Syme, 1985), (f) provision of self-esteem enhancement and resources related to stress (Heller, Swindle, & Dusenbury, 1986), and (g) verbal and nonverbal communication that influences perceptions (Albrecht & Adelman, 1987).

While social support may be informal or formal, nurses frequently serve as a formal source of social support for many populations. Nurses often have access, trust, and communication with individuals and through interventions that may enhance social support (Peterson & Bredow, 2004) especially in difficult transition periods (Mechanic, 1977) such as adolescent pregnancy or parenting. The need for social support during transition life stages is augmented by levels of additional stress (Peterson & Bredow, 2004). Adolescence and pregnancy are both periods of transition and added burdens of stress. The combination of both adolescence and pregnancy creates an environment with increased need for social support.

The value of social support in the profession of nursing has been widely described in the literature (M. Stewart, 1993; M. Stewart & Tilden, 1995). One example of social support in nursing is the nurse home visitor support utilized by the NFP (Peterson and Bredow, 2004). Peterson and Bredow (2004) distinguish the NFP as a source of formal support for pregnant and parenting clients that reinforce and organize the informal social support networks for participants. In this example, the NFP models House's (1981) conceptualization of social support including the constructs of emotional, informational,

instrumental, and appraisal support in order to achieve positive health outcomes for adolescent mothers and their children. House (1981) defines informational support as the sharing of information during stress and instrumental support as tangible resources. To further conceptualize social support, Norbeck developed a model for guiding social support research in the areas of clinical nursing practice (Norbeck, 1981).

Norbeck's Model of Social Support

Norbeck's (1981) model of social support utilizes nursing terminology such as person, environment, health, and nursing processes in order to describe a middle range theoretical approach for clinical application of social support in the discipline of nursing (Norbeck, 1981; Peterson & Bredow, 2004). Based on work by Kahn and Antonucci (Kahn, 1979; 1980a, 1980b), Norbeck begins the guiding model with properties of the person and situation using Kahn's conceptual definition of social support. Kahn defines social support as "interpersonal transactions that include one or more person toward another; the affirmation or endorsement of another person's behaviors, perception, or expressed views; the giving of symbolic or material aid to another," ultimately defining three key elements: (a) aid, (b) affect, and (c) affirmation (Kahn, 1979, p. 85). Properties of the person as defined by Norbeck include demographic characteristics, needs, and abilities of the person (1981). Properties of the situation as defined by Norbeck (1981) include examples of role demands, resources, and stressors.

In the conceptual model, the properties of the person and situation influence the amount of need for social support and the availability and use of social support networks (Norbeck, 1981). Through application of the nursing process, the nurse assesses and

determines whether insufficient or adequate social support is present for the individual (Norbeck, 1981). Using the model and sequencing of the nursing process, the nurse must use the information from the assessment as a basis for planning and intervention.

Norbeck suggests using one of two types of interventions:

1. interventions that focus on changing an inadequate level of social support to an adequate level through influencing the structure, functioning, or use of the person's social network, and
2. interventions that provide direct support or other help to the person during a specified period of time (or crisis) rather than attempting to influence the adequacy of social support through the indigenous network. (Norbeck, 1981, p. 47)

Based on the model, individuals with higher levels of social support either through *a priori* situations or with nursing interventions have a greater chance for positive outcomes (Norbeck, 1981). The contrary is also true; individuals with inadequate social support have a greater possibility of negative outcomes (Norbeck). Norbeck's model proposes that better health outcomes are associated with decreased stressors and increased levels of social support (Smith, Brown, Lewallen, & Penny, 2006) through interventions such as a nurse home visitor. In the conceptual model, arrows indicate relationships among concepts (Norbeck).

Additionally, in the model, Norbeck (1981) uses planning, intervention, and evaluation as critical components of the model. According to Norbeck, questions that must be addressed in the planning stage are as follows:

1. What is the capacity of the network to change?
2. Does the individual have the interpersonal skills and attitudes required to establish and maintain contact with network members?
3. Is the individual receptive to using existing self-help or support groups or to having contact with a person who has coped with a similar experience?
4. If help from the indigenous social support system cannot be made available or acceptable, exactly what support does this individual require to cope with the current stressors or illness?
5. What long-term help would be required to assist the individual to establish and maintain an adequate social support network? (p. 54)

For the intervention stage of the model, Norbeck suggests using formal social support, minimal disruptions to pre-existing social support structures, and achievable guidelines and outcomes for the individual (Norbeck, 1981). The NFP meets each of these criteria as an acceptable intervention to enhance social support networks. Nurses are formally educated to plan, assess, and establish interventions individually with achievable goals with the consideration of current social support networks while maintaining the fidelity of the NFP model (Nurse-Family Partnership, 2009, 2011d). Through conversation, interactions, and measurement tools, NFP home visitors can establish a formal realm of social support in addition to the participant's existing social support network.

Finally, the last component of Norbeck's model of social support is evaluation. The evaluation element of the model is indicative of the intervention's impact on social support, therefore creating a greater likelihood of positive or negative outcomes (Norbeck, 1981). Through evaluation, health promotion programs such as the NFP can

determine effectiveness which may impact policy and resource allocations for continuation of the program. Without this element, it is impossible to identify whether programs are meeting the needs of the individuals in which the programs serve.

Importantly, Norbeck's conceptual model offers a hierarchical model of outcome measurement and clinical practicality and has been used in previous adolescent research with religious activities and health outcomes (Smith et al., 2006). For example, the conceptual model has also been used with establishment of a health promotion program for adolescents called the College Bound Sisters program (Smith et al.). In this program, the stressors identified in the lives of young adolescent females are: (a) being an adolescent, (b) living in a home with a sister who is an adolescent mother, (c) being of lower socioeconomic background, and (d) being of minority descent (Smith et al.). Similar to the NFP, this health promotion program uses professional leaders to provide long-term social support to adolescents via meetings, telephone conversations, activities, and information materials. The use of social support for the College Bound Sisters program impacts the likelihood of: "avoidance of pregnancy, high school graduation, and college enrollment" (Smith et al., p. 202).

In an analysis of Norbeck's model of social support, the conceptual model is useful, and generalizable to multiple populations, parsimonious, and testable (Norbeck, 1981), which are key elements of theories as described by Walker and Avant (2005). The model is suggested for use in populations with life transitions such as pregnancy (Norbeck, 1988) and in various clinical nursing settings (Norbeck, 1981). The concepts within this model have a deep-rooted conceptual structure through the work of Kahn and

Antonucci (Kahn, 1979; 1980a, 1980b), therefore enhancing the validity of the model.

Additionally, there is an abundance of social support literature in nursing and other disciplines demonstrating the impact of social support on health outcomes developing an expansive spectrum of validity for the concept of social support and its current relevance to health.

While researchers have shown adolescents who are pregnant experience poor health and economic outcomes for both the mother and the infant and have delineated some of the factors associated with specific risky adolescent decision-making behaviors, researchers have not determined predictive models of general decision-making behaviors for adolescents who are parenting. Also, researchers have not indicated whether social support from a nurse home visitor impacts the decision-making behaviors for this population. In this study guided by Norbeck's model (1981) of social support, the concept of actual outcomes was identified as decision-making behaviors in adolescent mothers. The outcomes were measured utilizing the Adolescent Decision Making Questionnaire (ADMQ).

Norbeck's social support model (Figure 1) (Norbeck, 1981) was used to guide the research and has been tested previously using the Norbeck's Social Support Questionnaire (NSSQ) (1995). As defined in the conceptual model, levels of social support, whether adequate or inadequate, impact outcomes. The NSSQ has been used in research to examine social support of adolescents, specifically with pregnant adolescents of varying races and ethnicities (Koniak-Griffin & Lominska, 1993), self-management, knowledge, and social support in Black adolescents with asthma (Sin, Kang, & Weaver,

2005), and social support, immune function, and stress response in healthy and asthmatic adolescents (Kang, Coe, Karaszewski, & McCarthy, 1998). Additionally, the NSSQ has been used in an intervention study to determine if a relationship existed between nurses' social support and low birth weight outcomes for low income, pregnant, Black females (Norbeck, DeJoseph, & Smith, 1996).

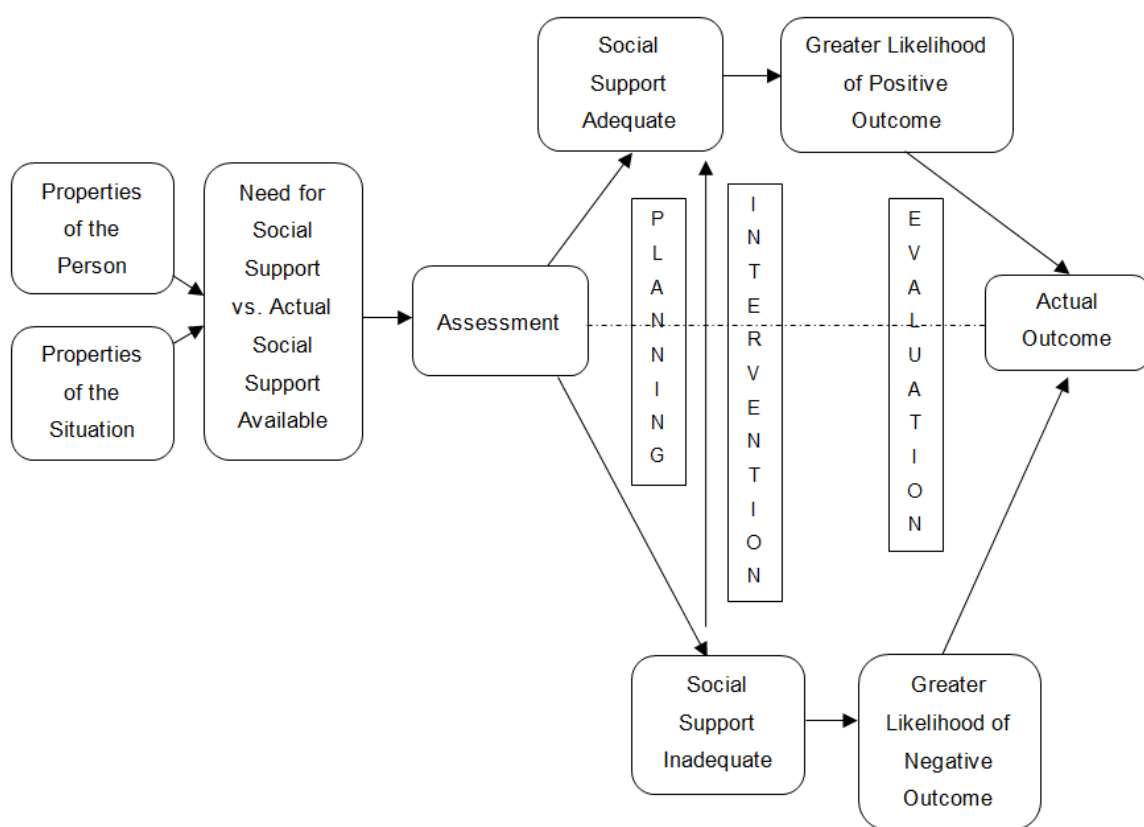


Figure 1. Conceptual model (Norbeck, 1981).

Norbeck and Anderson (1989) also used the NSSQ and other instruments to measure the relationship of stress, social support, anxiety, and substance use on pregnancy outcomes in low income women. In other studies, authors have used the NSSQ to measure the relationships between social support and: (a) the frequency and

accuracy of self-breast examination (Wagle, Komorita, & Lu, 1997), (b) life stressors for a Puerto Rican community in Boston (Falcon, Todorova, & Tucker, 2009), (c) anxiety and fear in patients receiving coronary artery bypass grafting (Koivula, Paunonen-Ilmonen, Tarkka, Tarkka, & Laippala, 2002) and (d) self-efficacy, quality of life, and health perception for women diagnosed with HIV (Kirksey, Hamilton, & Holt-Ashley, 2002). The NSSQ has also been used in cancer research (Bertero, 2000) and functional recovery in hip fracture patients (Oh & Feldt, 2000).

In this study, the NSSQ was used to measure adolescents' perceived levels of social support and the level of social support received from the NFP nurse home visitor. In a meta-analysis by Secco and Moffatt (1994), the NSSQ is identified as an appropriate instrument for research with adolescent mothers due to the robust conceptual basis and established psychometric properties. In addition to the concept of social support, properties of the person are defined as demographic characteristics of the NFP participant. The demographic characteristics were measured through the Adolescent Demographic Questionnaire (ADQ) (2009). Properties of the situation are defined as chronic daily stressors and were measured empirically with the Everyday Stressors Index (ESI) (1983).

Demographic variables for the study included: (a) the participant's age, (b) living status, (c) race/ethnicity, (d) marital status, (e) public or private education, (f) educational level (g) employment status, (h) hours worked per week, (i) age of the baby, (j) nurse home visitor and (k) NFP site location. It is well established that socioeconomic status contributes to current disparities in healthcare (Smedley, Stith, & Nelson, 2003). Ver

Ploeg and Perrin (2004) identify social economic position as one of the four key complex dimensions in health disparities “encompassing a number of elements of a person’s position in society, including economic resources (earnings, income, and wealth), social resources (social networks and connections to community resources), education (formal credentials, communication skills, and health information), and occupation” (pp. 33-34). It is not determined in the existing literature that influencing factors related to decision-making and decision-making behaviors are influenced by surroundings such as social network and our current environment, and more research is needed to establish if social economic position has a negative effect on decision-making behaviors. Because all participants in the study were of lower socioeconomic status, the variables of social support network, education, and employment were measured.

Other researchers have shown that the demographic and social variables that impact pregnancy include: (a) race/ethnicity (Chandra, Martinez, Mosher, Abma, & Jones, 2005; Dye, 2005; Jaccard, Dodge, & Dittus, 2003; Mathews & MacDorman, 2008; Menacker, Martin, MacDorman, & Ventura, 2004; Ventura, Mathews, & Hamilton, 2001), (b) age (Chandra et al., 2005; Hamilton, Martin, & Ventura, 2009; Jaccard et al., 2003; Menacker et al., 2004), (c) employment (American Academy of Pediatrics, 1989; Chandra et al., 2005; Dye, 2005), (d) education levels (American Academy of Pediatrics, 1989, 2001; Chandra et al., 2005; Dye, 2005; Jaccard et al., 2003; Mathews & MacDorman, 2008), (e) socioeconomic levels (Chandra et al., 2005), (f) social support (Chandra et al., 2005; Gillmore, Lewis, Lohr, Spencer, & White, 1997) and (g) marital

status (American Academy of Pediatrics, 2001; Chandra et al., 2005; Dye, 2005; Jaccard et al., 2003; Mathews & MacDorman, 2008; Ventura et al., 2001).

Researchers have also shown that certain variables influence adolescent decision-making behaviors such as: (a) race and ethnicity (Friedman & Mann, 1993; Gardner & Steinberg, 2005; Males, 2009; Ompad et al., 2006) (b) grade point averages or intelligence (Blum, McNeely, & Nonnemaker, 2002; Moore & Davidson Sr., 2002), (c) family background (Blum et al., 2002; Moore & Davidson Sr., 2002; Oman, Vesely, & Aspy, 2005), (d) pregnancy related experiences (Moore & Davidson Sr., 2002), (e) education (Cooper, Wood, Orcutt, & Albino, 2003; Overman, 2004), (f) socioeconomic levels (Gillmore et al., 1997; Males, 2009; Pittman & Chase-Lansdale, 2001; Roche et al., 2005; Sobol & Daly, 1992; Wambach & Koehn, 2004) and (g) social support and relationships (McKee, Karasz, & Weber, 2004; Moore & Davidson Sr., 2002). Other factors found in the literature related to decision-making behaviors are: (a) age, (Ashby, Arari, & Edmonson, 2006; Cebulla, 2009; DiIorio, Dudley, Soet, & McCarty, 2004; Gardner & Steinberg, 2005; Halpern, Joyner, Udry, & Suchindran, 2000; Ompad et al., 2006; Steinberg & Cauffman, 1996) (b) gender (D'Acremont & Van Der Linden, 2006; Miller, Barnes, Melnick, Sabo, & Farrell, 2002; Silveri, Tzilos, Pimentel, & Yurgelun-Todd, 2004), (c) exercise and athletic participation (Miller et al., 2002), (d) parental control (Males, 2009; Pete & DeSantis, 1990; Snethen, Broome, Knafl, Deatricks, & Angst, 2006; Udell, Bannon Jr, & McKay, 2008), (e) peer influence (DiIorio et al., 2004; Farrington, 1995; Gardner & Steinberg, 2005; Grosbras et al., 2007; McCabe & Killackey, 2004; Oman et al., 2005; Weiss, 2007), (f) substance abuse (Cooper et al.,

2003; Hoff, Greene, & Davis, 2003), (g) community involvement (Ashby et al., 2006) and (h) marital status (Gillmore et al., 1997). All adolescents included in the study were low-income and first-time mothers for enrollment in the NFP. While the NFP does not restrict participation to age, adolescents were the primary focus of this study. Because adolescents are unlikely to report income accurately (Chandra et al., 2005) and all adolescents included in the study were of lower socio-economic status, income was not included as a variable in the study.

In addition to demographic variables, social support, everyday stressors and decision-making behaviors were explored. In the study, social support was measured through the variables included on the NSSQ which are: (a) emotional support, (b) aid, (c) total function, (d) total network, and (e) total loss. For the purpose of assessing additional outcomes of the NFP, the nurse home visitor's social support findings were measured and coded independently as well as included in the total support for the study participant. Each participant identified individuals who provide social support and the type of relationship (e.g. mother, father, nurse) providing data related to the quality, quantity, and type of social support as well as loss of social support for the respondent.

In Norbeck's (1981) model of social support which guided the study, "an issue central to (the) intervention is to distinguish social support from the professional helping process" (Norbeck, p. 54). Often the use of a professional, such as a nurse home visitor, can be used as a unidirectional and direct form of social support for an individual to meet a specific outcome (Norbeck, 1981, 1988). Norbeck (1981) describes the use of a professional as not meeting the requirements for social support due to the lack of the

bidirectional relationship. Nonetheless, she identifies that the use of professionals is critical in facilitation of coping in situations of crises, stress, or transitions in order to augment and maintain an individual's current social support systems and can be effective in interventions. Adolescents who are new parents are often in situations of stress or transition.

Additionally, nurses are often a source of tangible resources and informational support, and have been shown effective in the mobilization of existing social support networks for clients (Peterson & Bredow, 2004). Furthermore, nurses have the potential to increase emotional and appraisal support for clients (Peterson & Bredow, 2004). To support the use of professional formal support, Norbeck has used nurses' social support interventions with low-income pregnant Black women to demonstrate that support from nurses impacted low-birth weights of infants for participants in the study (Norbeck et al., 1996).

Chronic daily stressors or everyday stressors were measured through the ESI, which focuses on self-report of financial concerns, role overload, parenting worries, employment problems, and interpersonal conflict. The ESI has been used in multiple studies: (a) to test maternal stressors and depression (Hall, 1990; Hall & Farel, 1988; Hall, Gurley, Sachs, & Kryscio, 1991; Hall, Kotch, Brown, & Rayens, 1996; Hall, Williams, & Greenberg, 1985; Peden, Rayens, Hall, & Grant, 2005), (b) child behavior (Hall & Farel, 1988; Hall et al., 1991; Hall, Rayens, & Peden, 2008), (c) social support (Hall et al., 1996; Hall et al., 1985) and (d) parenting attitudes (Hall et al., 1991; Peden, Rayens, Hall, & Grant, 2004; Peden et al., 2005), but has not been tested with

adolescents. Chronic daily stressors have been shown to impact children and adolescents psychologically (Rutter, 1994; Schmeelk-Cone & Zimmerman, 2003; E. Stewart, Simmons, & Conger, 2002), socially, and developmentally (Schmeelk-Cone & Zimmerman, 2003). Levels of social support impact the effects of stress (Falcon et al., 2009; Mechanic, 1977; Norbeck, 1981, 1988; Roberts, 1984). More importantly, chronic daily stressors in adolescents have been linked to maladaptive coping behaviors (Rasmussen, Aber, & Bhana, 2004), which is measured through the ADMQ as a component of decision-making and levels of social support (Schmeelk-Cone & Zimmerman, 2003). This framework was the basis of the guiding conceptual model for the study.

The outcome variable for the study was decision-making behaviors as measured through the ADMQ (1989). The ADMQ has been used to explore the relationship between decision-making behaviors and: (a) self-esteem (Commendador, 2007), (b) contraceptive behaviors (Commendador, 2007), (c) gambling behaviors (Franken & Muris, 2005), (d) impulsivity (Franken & Muris, 2005), (e) parents' confidence and competence in decision-making (Brown & Mann, 1991), (f) culture and nationalities (Friedman & Mann, 1993; Radford, Mann, Ohta, & Nakane, 1993), (g) decision stress (Radford et al., 1993), (h) varying adolescent ages (Ormond, Luszcz, Mann, & Beswick, 1991), and (i) genders (Ormond et al., 1991). The instrument was designed specifically for adolescents (Brown & Mann, 1990; Mann et al., 1998) and has been successfully used with adolescents (Brown & Mann, 1991; Commendador, 2007; Friedman & Mann, 1993; Mann, Harmoni, Power, Beswick, & Ormand, 1988; Ormond et al., 1991; Tuinstra, van

Sonderen, Groothoff, van den Heuvel, & Post, 2000). The ADMQ evolved from the Flinders Decision Making Questionnaires I and II (Janis & Mann, 1977; National Network for Child Care, 1998). Based on previous use of the ADMQ, decision-making behaviors was subdivided into self-esteem, vigilance (positive decision-making behaviors), and maladaptive (negative) decision-making behaviors. The category of maladaptive or negative decision-making behaviors was broken down into subscales for complacency, cop out, and panic (Mann et al., 1988). The category of cop out was segmented into three subsets: (a) defensive avoidance, (b) put it off and (c) pass it on. For all concepts for the study, the conceptual, theoretical, and empirical structures are described in depth below and the visual portrayal is depicted in Figures 1, 2, and 3.

Conceptual Model, Theoretical Framework and Empirical Framework

Conceptual, theoretical, and empirical structures offer a hierarchical design that blend the most abstract levels of thinking to concrete measurements, offering a specific lens or perspective to examine a phenomenon (Fawcett, 1999, 2005). In the study, Norbeck's (1981) model of social support, as depicted in Figure 1, was used as the frame of reference and conceptual model for decision-making behaviors of parenting adolescents enrolled in the NFP. Conceptual models serve as the lens for research and offer a more abstract network of concepts within the phenomenon (Fawcett, 1999, 2005). The theoretical framework is illustrated in Figure 2 and is narrower in range than the conceptual model (Fawcett, 1999, 2005), only offering limited concepts that were empirically measured in the study. The concepts that are described in the theoretical

framework can be measured through instrumentation and are exemplified in Figure 3.

The conceptual-theoretical-empirical design for the study is depicted in Figure 4.

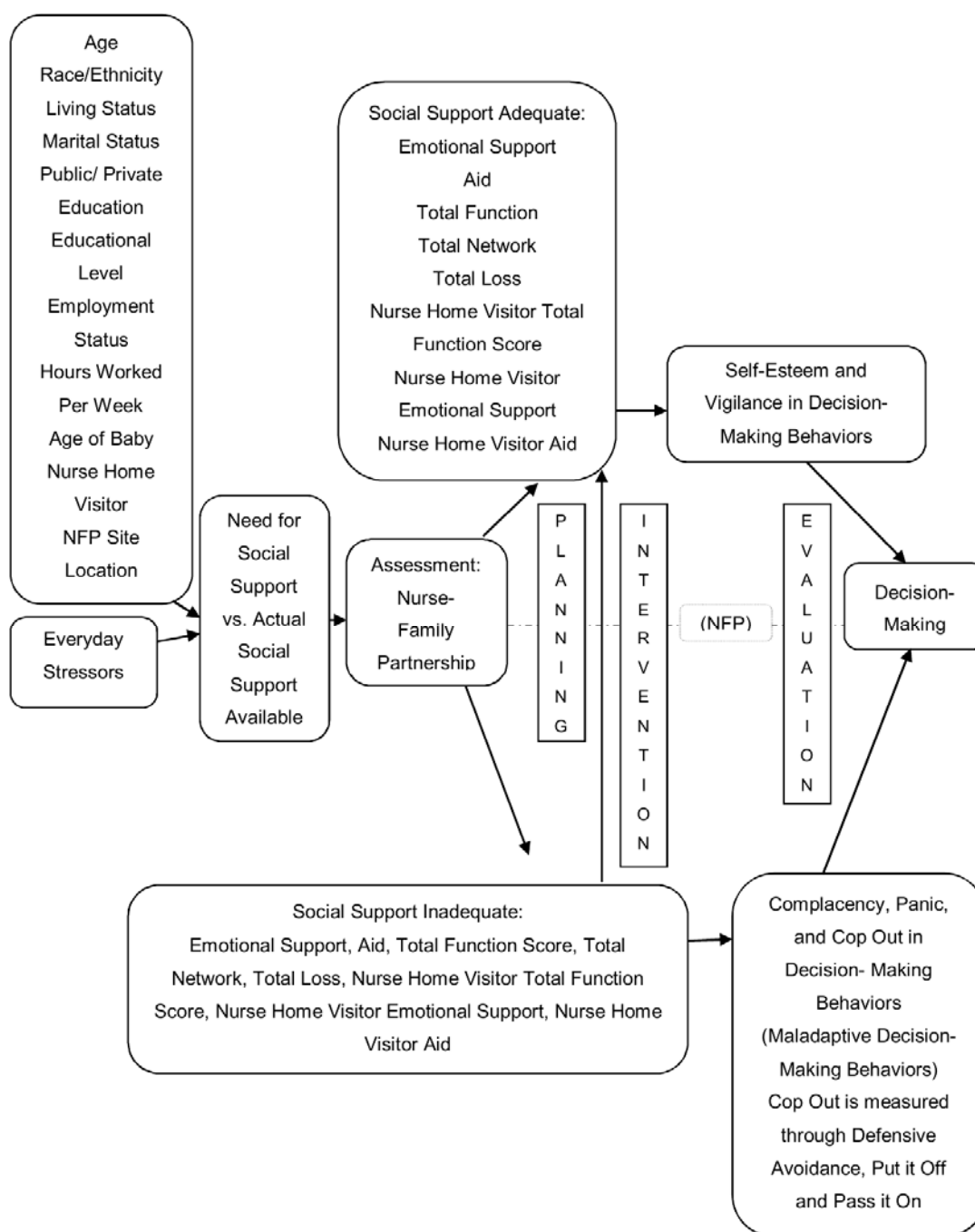


Figure 2. Theoretical framework.

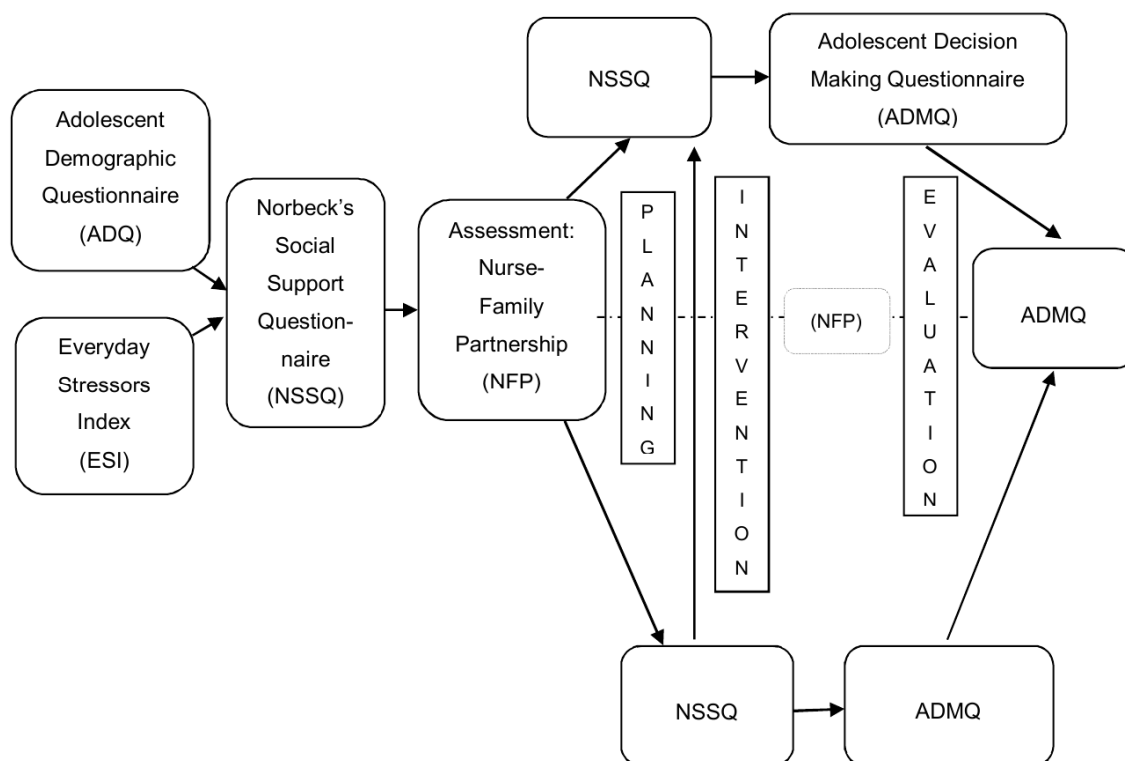


Figure 3. Empirical framework.

Assumptions

The following are assumptions related to the study.

1. Adolescent mothers answered survey questions and interview questions honestly.
2. Participants' responses were sufficiently informative to enable the PI to contribute to the research and body of knowledge regarding decision-making behaviors, social support, and everyday stressors of parenting adolescents.
3. Adolescent mothers offered insight into adolescent decision-making behaviors.

Concept	Theoretical Definition	Empirical Measurement
Properties of the Person	Age, Living Status, Race/Ethnicity, Marital Status, Public or Private Education, Educational Level, Employment Status, Hours Worked Per Week, Age of the Baby, Nurse Home Visitor and NFP Site Location	ADQ
Properties of the Situation	Chronic Everyday Stressors	ESI
Need for Social Support Vs. Actual Social Support	Social Support Availability	NSSQ
Social Support Adequate	Social Support Availability	NSSQ
Social Support Inadequate	Social Support Availability	NSSQ
Greater Likelihood of Positive Outcome	Self-Esteem and Vigilance in Decision-Making Behaviors	ADMQ
Greater Likelihood of Negative Outcome	Complacency, Panic, and Cop Out in Decision-Making Behaviors	AMDQ
Actual Outcome	Decision-Making Behaviors	ADMQ

Figure 4. Conceptual model, theoretical framework, and empirical framework.

4. Participants were in control of their lives and made decisions based on social support, properties of the individual, and properties of the environment.
5. Properties of the person, situation, and social support affected decision-making behaviors.
6. Decision-making behaviors, social support, and everyday stressors could be quantified and tested through instrumentation and statistical analyses.
7. Data collected in the study reflected the participants' realities.

Aims and Research Questions

Specific Aim 1

Describe the decision-making behaviors of parenting adolescent females enrolled in the NFP.

Research Question 1

What are the decision-making behaviors for parenting adolescents enrolled in the NFP?

Specific Aim 2

Explore demographic variables, stressors, and social support that may influence decision-making behaviors in parenting female adolescents enrolled in the NFP.

Research Question 2

What variables are predictive of positive decision-making behaviors for parenting adolescents enrolled in the NFP?

Research Question 3

What variables are predictive of negative decision-making behaviors for parenting adolescents enrolled in the NFP?

Exploratory Research Questions

Research question 4. What is the relationship between demographic variables and the outcome of self-reported social support of parenting adolescents enrolled in the NFP?

Research question 5. What is the relationship between everyday stressors and the outcome of self-reported social support of parenting adolescents enrolled in the NFP?

Conceptual Definition of Terms

The conceptual definitions of terms for the study are listed below.

Decision-making – A combination of multiple factors that lead to an outcome or behavior from several alternatives

Decision-making behavior – The outcome of the combination of properties of the person, properties of the situation, and adequate or inadequate social support selected from alternative choices

Adolescents who are parenting (Adolescent Mothers) – Females ages 13 to 18 who have been pregnant, have given birth, and are providing care for a child

Social support – Emotional support, aid, total network, total loss, total function, and nurse home visitor support received by the adolescents who are parenting

Need for social support – All humans are born with the desire to have social interactions and support from other individuals

Actual social support – Levels of social support reported by parenting adolescents enrolled in the NFP

Adequate and inadequate social support – Levels of social support reported by parenting adolescents that meet or do not meet the support needs

Properties of the person – Demographic variables including: (a) age, (b) living status, (c) race/ethnicity, (d) marital status, (e) public or private education, (f) educational level, (g) employment status, (h) hours worked per week, (i) age of baby, (j) nurse home visitor, and (k) NFP site location as reported by adolescents enrolled in the NFP

Properties of the situation – Self-report of resources, transportation, responsibilities, concerns, and problems

Greater likelihood of positive outcomes – The likelihood of higher levels of vigilance and self-esteem decision-making behaviors

Greater likelihood of negative outcomes – The likelihood of higher levels of complacency, cop-out, panic, defensive avoidance, put it off, and pass it on decision-making behaviors

Actual outcomes – The decision-making behaviors of the parenting adolescents enrolled in the NFP

Assessment – Assessment as defined and performed by the NFP program with fidelity to the NFP model (Nurse-Family Partnership, 2011d)

Planning – Planning as defined and performed by the NFP program with fidelity to the NFP model (Nurse-Family Partnership, 2011d)

Intervention – The NFP and the nurse home visitor interaction in the 64 home visits during the course of the pregnancy from 12 weeks gestation up the child's second birthday (Nurse-Family Partnership, 2011d, 2011e)

Evaluation – Evaluation as defined and performed by the NFP program with fidelity to the NFP model (Nurse-Family Partnership, 2011d)

Empirical Definition of Terms

Decision-making – The combination of demographic variables as reported by adolescents on the ADQ, everyday stressors as reported by adolescents on the ESI, and social support as reported by adolescents on the NSSQ that lead to reported scores on the ADMQ

Decision-making behavior – The positive (vigilance and self-esteem as reported by adolescents on the ADMQ) or negative (maladaptive behaviors as reported by adolescents on the ADMQ) outcomes of the combination of properties of the person (ADQ), properties of the situation (ESI), and adequate or inadequate social support (NSSQ)

Adolescents who are parenting (Adolescent Mothers) – Females ages 13 to 18 who have been pregnant and have given birth as reported by adolescents on the ADQ

Social support – The total score on the NSSQ for: (a) emotional support, (b) aid, (c) total network, (d) total loss, (e) total function, and (f) nurse home visitor support received by adolescents who are parenting

Actual social support – Scores on the NSSQ reported by parenting adolescents enrolled in the NFP

Adequate and inadequate social support – Scores were measured using the NSSQ. For individuals, adequate levels of social support were deemed 22 or higher as determined by previous research and PI calculations (Norbeck et al., 1996; 2001). Levels below 22 were deemed inadequate social support. For the construct of total function, the score was divided by the number of individuals listed as support persons (total network score). Adequate social support was determined if the average score was 22 or higher. Scores less than 22 were deemed inadequate social support.

Properties of the person – The variables of: (a) age, (b) living status, (c) race/ethnicity, (d) marital status, (e) public or private education, (f) educational level, (g) employment status, (h) hours worked per week, (i) age of baby, (j) nurse home visitor, and (k) NFP site location as reported by adolescents enrolled in the NFP on the ADQ

Properties of the situation – Self-report of resources, transportation, responsibilities, concerns, and problems as measured through the scores of the ESI

Greater likelihood of positive outcomes – The likelihood of higher scores on the ADMQ in the areas of vigilance and self-esteem

Greater likelihood of negative outcomes – The likelihood of higher scores on the ADMQ of complacency, cop-out, panic, defensive avoidance, put it off, and pass it on

Significance of the Study

The study has many implications for the discipline of nursing. Nurses employed by the NFP, school health, health departments, pediatrics, obstetrics, and public health may benefit from identification of decision-making behaviors of parenting adolescents. Knowledge about decision-making has the potential to influence nursing practice and

may influence the design of future adolescent pregnancy prevention programs. Knowledge gained from the study may also provide a supplementary foundation for augmented support and funding for additional NFP sites. Specifically, nurses in the NFP may utilize this information to assist pregnant and parenting adolescents in determining choices that are best for the adolescent and the adolescent's child. Similarly, the ability to promote positive decision-making behaviors through multiple disciplines may indirectly influence future success of both the mother and the infant through the identification of decision-making in this population. Many nurses, such as the NFP's nurse home visitors and pediatric nurses have direct access to adolescents, possibly potentiating adolescents' positive decision-making behaviors through education, communication, and direct interventions. Nurses also offer a safe haven for open communication and honest unbiased answers for adolescents who may participate in risky decision-making behaviors, but it is also the role of the nurse to convey the open exchange of communication and to assess for these risky behaviors.

Nurses, with their unique knowledge, skills, and entry into the lives of adolescents, have the opportunity to assess and intervene with adolescents, parents, and school personnel with the goal of preventing or intervening in problem behaviors often seen in adolescents. Developing and testing interventions that bring to bear the unique contributions of nurses must be undertaken. The need for effective nursing interventions—both to prevent and alter existing risky behaviors in adolescents—is great. (Bartlett, Holditch-Davis, & Belyea, 2007, p. 17)

By identifying if the NFP influences decision-making behaviors, nurses may utilize research findings for evidence-based practice, and can more effectively promote health promotion programs such as the NFP with empirical positive outcomes for policy

and continued resource allocations. Outside of the discipline of nursing, guidance counselors, teachers, and parents and guardians may benefit from knowledge of decision-making behaviors for parenting adolescents to prevent negative health outcomes and risky behaviors. Ideally, this information can be used across multiple platforms to assist adolescents in making decisions that benefit the person and improve their future health. More specifically, the study is appropriate because there is a paucity of information in the literature about variables that impact adolescent decision-making behaviors for parenting adolescents. Further research is needed in this area to continue the development of knowledge prior to creation of interventional programs to impact adolescent decision-making.

Summary

In the area of social support, there is limited information about the influences of social support and nurse social support on adolescent decision-making behaviors for those who are parenting. Two of the gaps in the social support literature are clearly identified as a need for additional research in predictive and causal relationships and effective social support interventions (Peterson & Bredow, 2004). This study addressed both predictive relationships of variables and assessment of a current social support intervention, the NFP, through a cross-sectional research design.

Adolescents who are parenting have been identified as a vulnerable at-risk group and have a long history of risky decision-making behaviors. By addressing the decision-making behaviors of adolescents using an appropriate theoretical framework such as Norbeck's (1981) model of social support, nurses may transform this information into

interventions to promote adolescents' positive decision-making behaviors. Thus, it may enhance the associated health outcomes for this population. For example, researchers examining postneonatal death in healthy infants born to adolescent mothers have found that providing increased social support measures has a positive effect on the lives of the subsequent children of the adolescent mothers (Phipps, Blume, & DeMonner, 2002).

In addition, health disparities are prevalent for adolescent mothers. While these disparities have existed for decades, current practices and health promotion programs are not significantly reducing the rates of adolescent pregnancy. Additionally, the availability of support from health promotion programs is not equivalent to the number of pregnant and parenting adolescents who need program support. Further research is needed to assess current health promotion programs such as the NFP and to expand the nursing science regarding decision-making behaviors and predictive models of decision-making behavior choices and subsequent outcomes. Through discovery of this knowledge and truth, nursing and other disciplines may facilitate adolescents in decision-making behaviors and indirectly decrease the health disparities for this population. This knowledge may be used to enhance current health promotion programs and to create new prevention programs to reduce adolescent pregnancy rates and associated negative health outcomes.

CHAPTER II

LITERATURE REVIEW

Although health outcomes resulting from adolescent decision-making behaviors are documented in the literature, there is minimal evidence of the factors influencing adolescent decision-making behaviors with pregnancy and parenting. The focus remains on addressing the health issues after adolescents become pregnant or give birth. Additionally, societal disputes for and against prevention measures such as abstinence or safe sex practices for adolescent pregnancies remain unresolved creating gaps in pregnancy prevention efforts. While health promotion programs, such as the Nurse-Family Partnership (NFP), promote positive outcomes for adolescent mothers, an initial step to reduce the numbers of adolescent pregnancies is to further understand adolescent decision-making behaviors, and thereby decrease the associated disparities for both mothers and infants.

Focusing on factors associated with adolescent decision-making is critical in this process. By exploring factors that are associated with adolescent decision-making, nursing and other disciplines can better understand the decision-making process for adolescents and therefore assist adolescents in making the best decisions within their social context. It is crucial that nurse researchers take a proactive approach and begin to explore what influences adolescents' risky decision-making behaviors in an effort to change the trends for this population related to adolescent pregnancy. In this chapter, a

discussion of decision-making behaviors for adolescents, adolescent pregnancy, and statistics are presented. In addition, the NFP research is discussed along with the current state of the science for the concepts within Norbeck's Model of Social Support, the guiding framework for the study.

Decision-Making Behaviors

“Adolescence is a developmental period characterized by suboptimal decisions and actions that give rise to an increased incidence of unintentional injuries and violence, alcohol and drug abuse, unintended pregnancy and sexually transmitted diseases” (Casey, Getz, & Galvan, 2008, p. 62). Health behaviors are the outcomes of decision-making; individuals' judgment and beliefs are key elements in many decision-making theories. The period of adolescence is a time of much decision-making with little experience and possible life-long consequences for actions. For many adolescents, decision-making behaviors lead to less than optimal outcomes, and society classifies the decisions as risky, or deems the adolescent at risk. Through further research regarding adolescent decision-making behaviors, nurses and society can influence adolescents' decision-making positively through individual interactions and use of health promotion programs. Strategies that have been identified to assist in adolescent decision-making behaviors include: (a) encouragement of a sense of control over behaviors, (b) exploring social support relationships, and (c) developing self-image or self-esteem (Commendador, 2003).

In a meta-analysis of behavioral intervention programs, researchers found that most effective programs incorporated decision-making into the curriculum (Robin et al.,

2004); although decision-making behaviors are not often measured as outcome criteria for effectiveness of health promotion programs. Decision-making behaviors have been identified as critical components and evaluation factors of prevention programs (Fischhoff et al., 1999). The attributes of positive adolescent decision-making have been defined through concept analysis with the emergence of the following four themes: (a) long-term relationships, (b) positive parental, peer, and partner influences, (c) internal locus of control, and (d) positive self-image (Commendador, 2003). Fantasia (2008) recently defined sexual decision-making in adolescence through a concept analysis guided by Walker and Avant's criteria (2005). In this analysis, attributes were defined as desire for intimacy, perceived relationship safety, problem solving, family and peer influence, concern for pregnancy or sexually transmitted infections, and cognitive ability. Antecedents were separated into primary and secondary levels; the primary antecedent is the initiation of a romantic relationship while the secondary antecedent is awareness of risks. Consequences of sexual decision-making behaviors in adolescence were both positive and negative, with the most negative consequence being pregnancy or contraction of a sexually transmitted infection (Fantasia, 2008). The adolescent decision-making primary antecedent was defined as initiation of a relationship, specifically heterosexual (Commendador, 2003). The secondary antecedents were defined as peer influences from a friend becoming pregnant or beginning birth control measures (Commendador, 2003).

Recent developments have shown that contrary to previous scientific beliefs that the brain is fully mature by age 12, the adolescent brain is a work in progress and

maturation can occur up to age 20 (Spano, 2003). Decision-making behaviors evolve over time and are formed by a compilation of one's own voice and reason, physical and psychosocial factors, and input from others indicating that decision-making behaviors may be modified up to 20 years of age. These concepts present the questions 'what are the factors that influence adolescent decision-making behaviors and how do you prevent risky decision-making behaviors for this vulnerable population?' To improve adolescent health and outcomes from decision-making behaviors, the key is "reflection – to see what may be underneath the surface of things and, equally important, to learn via insight" (Gunn & Gullickson, 2008, p. 10).

In the 1980s, risky adolescent decision-making was viewed as a result of hormones, which produced risk taking and disruptive behaviors (Cauffman, 2004). Following in the 1990s, beliefs regarding adolescent decision-making infused ideas about social upbringing producing unwanted behaviors (Cauffman, 2004), leading to the 21st century, where the focus on decision-making reflects normal and deviant patterns of development and the strategies to promote positive decision-making (Masten, 2004). Despite changing societal views, adolescents' risk-taking behaviors create challenges for nursing, healthcare, policy makers, and society and generate high economic costs for education, transportation, and healthcare (Reyna & Rivers, 2008).

The debate on factors influencing adolescent decision-making is ongoing. Research does not support that adolescent decision-making is based on irrational reasoning, lack of knowledge, or a false security of vulnerability as previously thought (Reyna & Farley, 2006; Reyna & Rivers, 2008). Vulnerability has been described in

adolescent decision-making literature for many years with various definitions. Much of the adolescent research with cognitive function implies that the period of adolescence creates developmental vulnerability because the brain is undergoing multiple changes in anatomy, hormones, and circuitry (Cauffman, 2004). Vulnerability is also described in the literature as a perceived state of increased risk, which varies by size of the risk, adult and adolescent perspectives, associated anxiety, and areas of priority or concern (Millstein & Halpern-Felsher, 2002). Steinberg (2004) suggests that adolescents are at an increased state of vulnerability due to novelty and sensation seeking and immaturity of self-regulation. Vulnerability, resilience, and development are all constructs that are interrelated, evolve over time, and are influenced by individual and environmental factors (Blum et al., 2002).

Despite previous beliefs that adolescents perceive themselves as vulnerable, other research has shown this belief is unfounded; often, adolescents' perceptions of vulnerability are similar to adults' (Millstein & Halpern-Felsher, 2002). Using a retrospective grounded theory approach, researchers found the majority of undergraduate college students ages 18 to 24 years of age described their prior adolescent sexual decision-making as being in control and experimenting and learning (Allen, Husser, Stone, & Jordal, 2008), attributes similar to adult decision-making behaviors.

In all actuality, knowledge, logic, and reality are similar among adolescents and adults, but yet, adolescents are more likely to choose riskier decision options (Steinberg, 2008). Adolescent decision-making also been described in the literature as a dynamic process (Michels, Kropp, Eyre, & Halpern-Felsher, 2005). Researchers in the area of

adolescent decision-making support behavioral interventions which may break the chain of negative outcomes associated with poor adolescent decision-making, although each approach varies (Fischhoff, 2008; Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008; Rivers, Reyna, & Mills, 2008). Many adolescents establish decision-making behavior patterns and activities that impact their current state of health and their future wellbeing early in life (Burt, Zweig, & Roman, 2002). Positive decision-making patterning can be created for pregnant and parenting adolescents through structured formal social support, such as the NFP's nurse home visitors.

Decision-making has been defined differently by various populations. For example, decision-making was defined by a focus group of low-income mothers enrolled in a community health advocacy program as collecting information, evaluating pros and cons, and then selecting based on the evaluated information (Becker et al., 2004). Much like the participants in the NFP, these women received social support. The support was provided through advocates as opposed to nurse home visitors. Decision-making was further described by participants as implying personal responsibility within decision-making and the value of mutual respect between the advocate and the client (Becker et al., 2004). Additionally, it was stated that respect was not always defined as agreement in the decision-making process, but that mutual respect occurred even when the advocate and client did not have concurrent views on the decision outcome (Becker et al., 2004). The concept of social support, regardless of the source, again remains a prevalent theme for adolescent decision-making behaviors.

In a nationally representative sample (Bartlett, Holditch-Davis, & Belyea, 2005), approximately 20% of adolescents self-reported problem behaviors such as substance usage, skipping school, fighting, lying to parents, shoplifting, and stealing; all are results of poor decision-making behaviors which can lead to both short- and long-term community, economic, and health related consequences for the individual and for overall society. Other examples of poor adolescent decision-making are demonstrated through a report from Hoff and colleagues from The Henry J. Kaiser Foundation (2003). They found that one in six adolescents believe that sexual behaviors without a condom are “no big deal” (p. 2), while three in five adolescents surveyed reported a potential pregnancy for them or their partner. Adolescents from the same study were frequently misinformed about safe decision-making behaviors related to sex and substance abuse, such as drugs and alcohol usage. The incorrect education was reported as an influence for more risky sexual decision-making behaviors indicated a clear need for formal social support persons within the lives of adolescents, especially those in high stress or transition periods. NFP nurse home visitors could serve as this formal social support and a source of education for pregnant or parenting adolescents, improving community, economic and health related outcomes for this population.

Research related to decision-making behaviors in pregnant adolescents and adolescent mothers is limited and has more recently been specifically narrowed to decision-making regarding sexual behaviors and risky behaviors (Ancheta, Hynes, & Shrier, 2005; Ashby et al., 2006; Bender, 2008; Brady & Halpern-Felsher, 2007; V. Burns, 1999; Casper, 1990; Condon, Corkindale, Russell, & Quinlivan, 2006; Dawson,

Shih, de Moor, & Shrier, 2008; DiIorio et al., 2004; Fantasia, 2008; Gillmore et al., 1997; Gordon, 1996; Harper, Callegari, Raine, Blum, & Darney, 2004; Hoppe et al., 2004; Kelsey, Abelson-Mitchell, Skirton, & Couns, 2007; Klitsch, 1991; Kuiper, Miller, Martinez, Loeb, & Darney, 1997; Martyn & Hutchinson, 2001; McCabe & Killackey, 2004; McKee et al., 2004; Michels et al., 2005; Miller et al., 2002; Moore & Davidson Sr., 2002; Murry, 1995; Namerow, Kalmuss, & Cushman, 1993; Nelson & Gorden-Larson, 2006; Oman et al., 2005; Ompad et al., 2006; Pete & DeSantis, 1990; Pittman & Chase-Lansdale, 2001; Roche et al., 2005; Rodriguez & Moore, 1995; Ryu, Kim, & Kwon, 2007; Salazar et al., 2005; Schaalma, Abraham, Gillmore, & Kok, 2004; Sobol & Daly, 1992; Stevens-Simon, Sheeder, & Harter, 2005; Tonelli, 2005; Weisman et al., 1991; Weiss, 2007; Weiss, Jampol, Lievano, Smith, & Wurster, 2008). Regardless of the sexual risky behavior research that has been done, there is still much more to know about risky behaviors and other decision-making behaviors of adolescents (Hoff et. al, 2003). A broader view of decision-making can provide important knowledge to many disciplines, including nursing. Gaps in the research indicate the need for more all-encompassing examination of predictive models of decision-making behaviors of adolescents, specifically adolescent mothers.

Adolescent Pregnancy

Adolescent pregnancy is an individual and societal concern, sparking public policy debate across the political spectrum. Adolescents who are pregnant or parenting are considered a vulnerable population due to the limited access to social, educational, and financial resources, placing this population at a higher risk for negative health

outcomes (Martin et al., 2009). Despite previous beliefs that adolescents perceive themselves as vulnerable, researchers have demonstrated that this belief is unfounded; often, adolescents' perceptions of vulnerability are similar to adults', leading to perceptions that they are not a vulnerable group, hence, they may have more risky decision-making behaviors (Millstein & Halpern-Felsher, 2002). The gap in the perception of vulnerability may lead pregnant or parenting adolescents to believe that they are not subject to negative health outcomes, regardless of what history and research has shown. Therefore, this population has a greater need for programs that promote positive decision-making behaviors and ultimately may improve health outcomes for both the mother and child.

The primary focus of most health interventions aimed at this population is support for mothers and infants. Goals of these health interventions often converge on prevention measures such as decreasing negative outcomes associated with adolescent pregnancy. The NFP works to reduce the health disparities experienced by low-income, first-time mothers, and improve the health outcomes of enrolled participants. One of the first steps in promoting adolescent health is an understanding of the decision-making behaviors of pregnant and parenting adolescents. Research related to decision-making behaviors of adolescents who are pregnant or parenting is frequently limited to sexual decision-making and risk-taking and does not address general decision-making behaviors which influence all aspects of the adolescents' lives including health outcomes. The exploration of general decision-making behaviors in this study offers many potential benefits to the

discipline of nursing, social sciences, and for the adolescents who are parenting, such as leading to the design of more effective programs.

Statistics

While researchers have demonstrated that adolescents with lower socioeconomic status, adolescent mothers, and their children have decreased quality of healthcare and poorer health outcomes such as premature births, low birth weights, and inadequate weight gain during pregnancy (Anderson, Smiley, Flick, & Lewis, 2000; Brindis, 1999; Menacker et al., 2004), health disparities for this population still exist. Additionally, health disparities for adolescent pregnancy currently exist by race and ethnicity and by geographic location (Kost, Henshaw, & Carlin, 2010).

Despite current adolescent pregnancy prevention efforts, pregnancy rates in the US have proliferated (Hamilton et al., 2009) and rates for adolescent pregnancy and births are higher as compared to other countries such as France, Germany, and the Netherlands (Alford & Hauser, 2009). In the US, almost half of all adolescents ages 15 to 19 years of age are participating in behaviors such as sexual intercourse (Centers for Disease Control and Prevention, 2012b), although the adolescent birth rate decreased two percent between 2007 and 2008 (Hamilton et al., 2010) and another six percent from 2008 to 2009 (Martin et al., 2011). For non-married adolescents specifically between the ages of 18 and 19, 64.3% of males and 68.8% of females report having sex (Centers for Disease Control and Prevention, 2012a).

Between 2006 and 2007, the percentage of adolescent pregnancy escalated for adolescents between the ages of 15 and 19, but remained unchanged for adolescents ages

10 to 14 (Hamilton et al., 2009). In 2009, the percentage of adolescent pregnancies decreased for all adolescent age categories (Martin et al., 2011). An even more alarming national statistic is that when examining the rates of adolescent pregnancy for only adolescents who are sexually active, the pregnancy rate skyrockets to 152.8 pregnancies per 1000 adolescents ages 15 to 19 (Kost et al., 2010) as compared to the reported 39.1 per 1000 adolescents, sexually active or not, ages 15 to 19 (Martin et al., 2011).

State Level Statistics

Adolescent pregnancy rates remain highest in the South and Southwest (Martin et al., 2011; Martin et al., 2009; Martin et al., 2007). More importantly, the birthrates in NC were reported as 44.9 per 1000 adolescents, higher than the national average of 39.1 births per 1000 adolescents (Martin et al., 2011). In 2009, the birthrate for adolescents in NC between the ages of 15 to 19 was 45 births per 1000 adolescents as compared to the subgroups: a) 15 to 17 years of age (23 births per 1000 adolescents) and b) 18 to 19 years of age (75 births per 1000 adolescents) (The Annie E. Casey Foundation, 2012). In previous years, the US' percentage of live births for mothers under the age of 20 was 10.4% in 2006 and 10.5% in 2007 (Hamilton et al., 2009). NC exceeded the US' percentage with rates of 11.7% for both 2006 and 2007 (Hamilton et al., 2009).

NC was also ranked 9th nationally in 2000 for adolescent pregnancy rates, 13th for adolescent birth rates, and 17th in abortion rates (Guttmacher Institute, 2006). There has been little improvement in these rates over the last decade as evidenced in the 2009 data; NC ranked 14th nationally for adolescent pregnancy rates (Guttamacher Institutie, 2010; Kost et al., 2010) 14th for adolescent birth rates, and 22nd in abortion rates (Guttmacher

Institute, 2010). NC has implemented the NC Pregnancy Risk Assessment Monitoring System Survey to examine factors related to pregnancy risk. Although there was a low response rate to the survey, the results provided alarming information: adolescents demonstrated having the least social support of all age categories, a possible contributing factor to poor decision-making behaviors in adolescent mothers (North Carolina State Center for Health Statistics, 2011a, 2011b, 2011c, 2011d, 2011e, 2011f).

The results of the survey indicated that almost 15% of the respondents less than 20 years old reported that since the delivery of their baby, they did not have someone to provide help if they were tired and felt frustrated with the new baby, the highest of all age categories (North Carolina State Center for Health Statistics, 2011f). For the same age group, 16.4% reported not having someone to help take care of their baby (North Carolina State Center for Health Statistics, 2011d). Similarly, 13.9% of the respondents less than 20 years old responded that they had no one to talk to about their problems and 26.9% had no one to loan them fifty dollars, both of which were also the highest for all age groups in the report (North Carolina State Center for Health Statistics, 2011b, 2011e). Approximately 10% reported not having anyone to help them if they were sick in bed (North Carolina State Center for Health Statistics, 2011c). The lack of social support for adolescents indicates a clear need to determine if implemented programs such as the NFP increase perceived levels of formal support through the use of nurse home visitors.

Health Complications

Health outcomes for adolescents are often less than desirable. Pregnancy complications for adolescents remain double the risk as compared to women in their

twenties (Save The Children, 2004). There are significant medical, psychosocial, and economic risks for adolescent parents and their children (American Academy of Pediatrics, 1989). Pregnant adolescents between the ages of 10 and 14 years of age are the least likely to receive prenatal care and the most likely to have preterm births and low birth weights as compared to all other age categories (Menacker et al., 2004). For this same age group, the risk for rates of preterm birth doubles as compared to women ages 20 to 39 (Menacker et al., 2004). Adolescents ages 10 to 14 who are pregnant have demonstrated the highest infant mortality rates (Mathews & MacDorman, 2008; Menacker et al., 2004), the lowest levels of timely prenatal care, increased neonatal mortality, and higher levels of inadequate weight gain, anemia, eclampsia, and pregnancy related hypertension (Menacker et al., 2004). For healthy babies born to adolescent mothers age 15 and younger, the odds of postneonatal death were three times that of adult mothers (Phipps et al., 2002).

Adolescents of all ages are less likely than adults to receive prenatal care, while being more likely to smoke during pregnancy, ultimately impacting health outcomes such as prematurity, low birth weight infants, infant mortality, and potential future developmental delays of their children (Brindis, 1999; Ventura et al., 2001). Additionally, early initiation of prenatal care among adolescents has not improved in the US although improvements of utilization of prenatal care services had increased in years prior to 2003 (Martin et al., 2007). In 36 states, only 83.9% of mothers reported beginning prenatal care within the first trimester for 2005, while 12 states reported rates of only 70.2% (Martin et al., 2007). Unfortunately, specific numbers for adolescents

were not reported. However, the NFP includes prenatal care as a core component of the program, ensuring that mothers are aware of resources, scheduled for appointments, and provided with resources for transportation and associated costs for medical care.

Despite the abundance of literature regarding the need for social support to affect positive health outcomes for adolescents who are pregnant or parenting, there is a clear gap between what is known and what is occurring in healthcare delivery systems. These statistics indicate poor decision-making behaviors may be the result of a lack of social support for this population, both formal and informal. Based on the results and statistics identified, a clear need for exploration of the relationship between adolescent decision-making behaviors and social support is needed for adolescent mothers and their children. Coupling the history of poor health outcomes for this population with decreased levels of social support can create an unyielding scenario for poor results. Interruption in this cycle may be prevented through the implementation of positive decision-making patterning through established programs such as the NFP.

The Nurse-Family Partnership

One cost effective health intervention in the US to assist adolescent mothers is the NFP. The aims of the NFP are to improve the pregnancy of the mother, enhance the health of the mother and infant, expand the children's developmental skills, to assist the mothers in becoming more self-sufficient, and to impact future generations through the use of a structured program centered on nurse home visitation (Nurse-Family Partnership, 2009, 2011g). The NFP has been identified by the Agency for Healthcare Research and Quality as an innovative program with strong evidence ratings which may improve

quality and reduce disparities (US Department of Health and Human Services, 2012). In addition to other funding sources, the NFP has been supported by the Robert Wood Johnson Foundation through 12 grants totaling 26.8 million dollars (Robert Wood Johnson Foundation, 2012).

Nurse-Family Partnership Outcomes

Through education related to maternal and infant health, child development, and positive reinforcement, the NFP program fosters a positive nurturing relationship with adolescent mothers leading to successful outcomes through positive empirical evidence. Outcomes of the NFP research have included improved: (a) prenatal health and social support (Olds, Henderson, Tatelbaum et al., 1986), (b) parenting behaviors (Olds et al., 1998), (c) birth spacing (Olds, Robinson et al., 2004), (d) grade point averages and academic measures for children (Olds et al., 2007), and (e) environments conducive to positive development for the child (Olds, Kitzman et al., 2004; Olds, Robinson et al., 2004). Researchers have also shown reductions in (a) child abuse and neglect (Olds et al., 1997; Olds, Henderson, Chamberlin, & Tatelbaum, 1986), (b) childhood injuries (Kitzman, Olds, & Henderson, 1998), (c) antisocial and delinquent behaviors (Eckenrode et al., 2010; Olds et al., 1998), (d) violence (Eckenrode et al., 2010; Olds, Robinson et al., 2004), and (e) usage of resources such as welfare, Medicaid, and food stamps (Eckenrode et al., 2010; Olds, Kitzman et al., 2004; Olds et al., 2007). Longitudinally, researchers have shown long-term positive effects for children of mothers with nurse home visitation resources including: a) increased rates of condom usage and reduced adolescent pregnancy rates (Eckenrode et al., 2010), b) decreased cigarette and alcohol consumption

(Kitzman et al., 2010; Olds et al., 1998), c) decreased number of sexual partners (Olds et al., 1998) and d) decreased arrests and jail time (Olds et al., 1997), potentially indicating that the NFP does affect decision-making throughout generations.

To ensure success, careful evaluation of all components of the NFP is measured at multiple levels with standardized evaluations and reports and quality improvement processes; and longitudinal research is conducted. Moreover, the program has not only demonstrated success in adolescent and child outcomes, but has been identified as cost effective. Nationally, adolescent pregnancy cost 9.1 billion dollars in 2004, and this cost is projected to increase with inflation (The National Campaign to Prevent Teen Pregnancy, 2008).

Due to the high costs of adolescent pregnancy, it is critical to implement programs that are cost effective and decrease societal contributions. The range of financial support for each family in the NFP is between \$2,914 and \$6,463, although research has shown that for each dollar invested, there up to a five dollar return (Nurse-Family Partnership, 2011a). After evaluating health promotion programs in Pennsylvania during the past 10 years, The Prevention Research Center for the Promotion of Human Development reported that for each dollar invested in the NFP, there was a \$3.59 return for the program (Jones, Bumbarger, Greenberg, Greenwood, & Kyler, 2008). The evaluation of economic benefits resulted in a total annual savings of \$119,574,400 due to prevention of associated subsequent pregnancies, preterm births, and childhood illnesses or injuries (Jones et al., 2008). In addition, multiple organizations have described the NFP as a cost effective program ranging from \$2.88 to \$5.70 return for each dollar invested (Karoily,

Kilburn, & Cannon, 2005; Nurse-Family Partnership, 2008; Nurse-Family Partnership, 2011a; Washington State Institute for Public Policy, 2004).

Despite the empirical and cost effective outcomes for the families, the availability of NFP programs is still limited, and resources are insufficient for accomplishing optimal health outcomes for the nation at large. Further empirical research in areas not previously studied may support future funding and resource allocation for NFP sites and will provide new insight for the evaluation of the program. One area that has not been addressed in the literature is decision-making behaviors, although the need for decision-making behaviors as a component and an evaluation tool for prevention programs has been addressed (Fischhoff, Crowell, & Kipke, 1999).

The NFP ensures fidelity to the model through a theory based program. The NFP program is an integration of three theories: Bowlby's attachment theory, Bandura's self-efficacy theory, and Bronfenbrenner's human ecology theory (Nurse-Family Partnership, 2011i). This theory-driven health promotion program specifies guidelines for the home visits, and the intensity and duration of content covered. Using attachment theory, nurses help to foster the interpersonal relationship and attachment between the mother and the child and promote independence for the mother. This social support relationship is fostered to assist mothers in making decisions regarding behaviors, and better understanding of their personal motivations, and setting obtainable goals resulting in greater positive outcomes for themselves and their children. The overarching goal of the NFP is to reduce health disparities.

The theory of self-efficacy purports that one's beliefs about his/her abilities, motivational influences, performance, and the amount of control over outcomes in his/her life influences behaviors (Nurse-Family Partnership, 2011i). Using recognition of these abilities and discovery of how adolescent mothers think and feel, nurses in the NFP foster self-efficacy to promote positive behaviors. Human ecology theory is also used in the interventions to examine the child's development in the context of multiple environments and the incorporation of relationships. Content is delivered through direct education, developmentally appropriate books, and web-based clinical information systems. While literacy levels of the NFP materials are intentionally designed to ensure appropriateness for the mothers, face to face education guarantees that literacy is not a requirement for enrollment in the program. To ensure fidelity to the model, over 60 hours of training for nurses and other employees is performed at the national headquarters in Denver, Colorado. Each nurse maintains a client caseload of 25 mothers and their families. Each geographical site typically employs four nurses, one supervisor, and administrative support personnel, allowing for one hundred families to be served. Weekly or bi-weekly visits are provided by baccalaureate educated Registered Nurses.

Randomized controlled trials have demonstrated that the NFP has produced positive effects. After initial success in New York in 1977, the program was studied in both Memphis, Tennessee in 1988 and Denver, Colorado in 1994. These studies supported both consistency and success of the program. Results demonstrated the intended positive outcomes and reduction of health disparities which included improved prenatal health, fewer childhood injuries, fewer subsequent pregnancies, increased

intervals between births, increased maternal employment, academic achievement, and improved school readiness (Chandra et al., 2012; Eckenrode et al., 2010; Olds et al., 1997; Olds, Henderson, Chamberlin et al., 1986; Olds et al., 1998; Olds, Henderson, Tatelbaum et al., 1986; Olds, Kitzman et al., 2004; Olds, Robinson et al., 2004). In addition to the NFP's substantial economic investments and returns, the NFP demonstrates positive health outcomes through evidence based research.

Nurse-Family Partnership Research

In 1986, David Olds examined child abuse of infants and children in homes of those enrolled in the NFP. Participants were less than 19 years of age with lower socioeconomic status. Olds and colleagues found that although incidence of abuse and neglect decreased for those in the NFP versus those mothers who were not participants in the NFP program, the numbers were not statistically significant. The results of this same study indicated that babies in the NFP as compared to the control group that received no treatment had more positive moods ($p = .04$), participating mothers reported greater concern for the infant ($p = .05$), and at 22 months, the participating mothers reported more appropriate restriction behaviors toward the infant ($p = .04$). Similarly, domestic violence and child abuse were examined within the participants of the NFP in a 15-year follow up study of a randomized control trial (Eckenrode et al., 2000). In this study, researchers found that NFP participants receiving nurse home visitation from pregnancy through infancy of the child had significantly fewer child abuse encounters than mothers not receiving nurse home visitation services (2000); although other NFP research has demonstrated that there were no significant differences for the rates of child abuse and

children's intellectual functioning for the children of NFP participants as compared to women receiving prenatal care through a health department clinic (Olds, Henderson, & Kitzman, 1994).

Additionally in other NFP research, mothers and infants in the NFP had fewer emergency department visits ($p = .04$) (Olds et al., 1998), 40% fewer injuries and ingestions and 35% fewer emergency room visits for NFP participants' children as compared to mothers receiving prenatal care through a health department clinic (Olds, Henderson, & Kitzman, 1994). Kitzman and colleagues (1997) found that children of participants in the NFP had significantly fewer injuries, ingestions, and days of hospitalization than children of mothers not enrolled in the NFP. These results also demonstrate one aspect of cost effectiveness of the NFP when examining medical costs associated with emergency and hospitalization care.

Olds has also evaluated the delivery of prenatal care in the NFP using a randomized clinical trial (Olds, Henderson, Tatelbaum et al., 1986). Participants in the NFP were more aware of community services ($p = .01$), regularly attended prepared childbirth classes ($p = .01$), received assistance from services such as WIC ($p = .03$), discussed personal stressors with others both formally and informally ($p = .02$), received social support during labor from multiple sources ($p = .01$), and received social support from the child's father during the pregnancy ($p = .02$) as compared to the control group. While support from formal groups and significant others were studied, the perceived social support of the nurse home visitor was not measured.

Health for the mother and infant has also been a focus of NFP research. Women in the NFP had fewer kidney infections ($p = .005$), improved diets ($p = .04$), and decreased cigarette consumption for smokers ($p = .0001$) (Olds, Henderson, Tatelbaum et al., 1986). In comparing NFP participants to mothers who did not receive nurse home visitation, NFP participants who smoked had greater reductions in cotinine levels in urine, a byproduct of nicotine (Olds et al., 2002). Smokers in the NFP had an 11% decrease in infants' low birth weights and a 2% incidence versus 10% incidence of preterm deliveries as compared to the control group (Olds, Henderson, Tatelbaum et al., 1986). For participants enrolled in the NFP, researchers noted a significant decrease in pregnancy induced hypertension as compared to mothers not receiving nurse home visitation support (Kitzman et al., 1997).

In a randomized controlled trial, a comparison of prenatal screenings at intervals of a control group versus paraprofessional home visitation and nurse home visitation demonstrated that participants with paraprofessional home visitors were less likely to be married ($p = .02$) and less likely to live with the child's father ($p = .03$) than the control group at a four year follow-up measurement (Olds, Robinson et al., 2004). In addition, mothers visited by paraprofessionals were more likely to work ($p = .04$), had a better sense of mastery and mental health ($p = .03$), exhibited more appropriate interactions during play ($p = .03$), and created more early learning environments in their homes ($p = .03$) (Olds, Robinson et al., 2004). Olds and colleagues also supported that NFP participants were more likely to work (Olds et al., 2002) and had significantly longer lasting relationships with partners (Olds et al., 2010) when compared to first time

mothers not receiving nurse home visitation. Compared to a control group, paraprofessional visits did not demonstrate significant impact on birth spacing, the interval of time between the first and second children. However, nurse visits were associated with significantly longer time frames in between births (Kitzman et al., 2000; Olds et al., 2002; Olds, Robinson et al., 2004), fewer subsequent pregnancies (Kitzman et al., 2000; Olds et al., 2002) and significantly fewer second pregnancies (Kitzman et al., 1997, 2000; Olds et al., 2002).

Other empirical outcomes from the study that demonstrated effectiveness of the NFP included environmental factors both related to violence and the fostering the child's wellbeing. Those who had nurse visits also reported less violence in the home ($p = .05$) (Olds, Robinson et al., 2004). Similar to the paraprofessional home visitation, nurse home visitation showed home environments conducive to early learning ($p = .03$), infants displayed better speech development ($p = .04$), physical function ($p = .004$), and adaptations in behaviors ($p = .04$) as compared to the control group (Olds, Robinson et al., 2004). Related results have shown that children of NFP participants as compared to children of mothers not receiving nurse home visitation services demonstrated increased mental developmental behaviors, more appropriate emotional responses and decreased language delays (Olds et al., 2002). Mothers in the NFP reported significant decreased role impairment with friends, family and work related to alcohol and drug use and a perceived increased maternal mastery (Olds et al., 2010). Longitudinal evidence has shown significantly higher scores in reading and math as well as standardized testing for

children of NFP participants 12 years post enrollment of the mother in the NFP (Kitzman et al., 2010).

The NFP has demonstrated success with both mothers and infants, but has also shown that there may be some impact on future adolescents' health decision-making behaviors, indicating that the NFP may in fact impact decision-making not only for the mother, but through the generations. Longitudinal study results demonstrated that at age 15, children of mothers who were participants in the NFP reported less cigarette and alcohol usage ($p = .10$ and $p = .03$, respectively) and fewer sexual partners ($p = .003$) (Olds et al., 1998). Comparably, for 12 year old children of participants in the NFP, there were significant reductions in cigarette, alcohol and marijuana use during a 30 day period prior to the interview and significantly less reported mental health issues such as depression and anxiety (Kitzman et al., 2010). Longitudinal studies also indicate that participation in the NFP greatly benefits the children as well as the mothers. For example, arrest rates for children at age 15 decreased by 61%, convictions by 72%, and days spent in jail by 98% (Olds et al., 1998). Additionally, violations of probation for children at age 15 that had a parent involved in the NFP were decreased ($p = .001$).

Other longitudinal study results indicated that participation in the NFP reduced child abuse and neglect by 48% as well as a 90% reduction in unchangeable bad behaviors of the children by age 15 (Olds et al., 1997). In a 19 year longitudinal study, researchers found that girls born to mothers previously participating in the NFP program were less likely to have been arrested or convicted of a crime and had fewer lifetime arrests and convictions as compared to the control group (Eckenrode et al., 2010).

Additionally, researchers indicated that female adolescent children of mothers who had been enrolled in the NFP had committed less violent or serious crimes (Eckenrode et al., 2010).

In the same sample, both nurse home visited male and female youth had increased rates of condom use, while females had reduced pregnancy rates and were less likely to use Medicaid services than the comparison group (Eckenrode et al., 2010), again supporting that positive decision-making behaviors may be an unplanned outcome of the NFP program not only for the participants, but for the children of the participants as they become adolescents. Other research has supported that NFP participants in comparison to mothers not receiving nurse home visitation have significantly decreased use of food stamps and other forms of aid (Kitzman et al., 2000) and significant decreases in government spending on aid during a 12 year period (Olds et al, 2010), again sustaining the cost effectiveness of the NFP for governmental programs and promotion of self-sufficiency for the NFP mothers.

Rigorous testing of the model has shown that the program interventions are age and culturally appropriate, based on the diversity of sampling regarding ages, ethnicity, and geographic locations. Results of the NFP imply success in promoting decision-making behaviors for adolescents regarding criminal behavior, sexual activity, and lifestyle behaviors, but the NFP cannot reach all first time mothers of lower social economic status. Despite the large number of studies from the NFP researchers, there is potential bias in the results due to the conflict of interest among the constituents.

Research conducted by an outside individual may provide an unobstructed view of the outcomes of the NFP.

While program success and cost benefits are important, the rise in the incidence of adolescent pregnancies and birth rates indicate a need for a more preventative focused program and greater understanding of the factors that influence decision-making in this population. Therefore, research related to social support, demographic variables, and everyday stressors that may influence decision-making behaviors and decision-making behaviors in adolescent mothers was needed. In order to measure the variables effectively, the guiding framework of Norbeck's model of social support was used in this study.

Norbeck's Model of Social Support

Norbeck's middle range theoretical approach of social support is a hierarchical model that has clinical practicality and balances well with the established structure of the NFP. Within Norbeck's model of social support, the concepts of properties of the person, properties of the situation, adequate or inadequate social support, likelihood of positive outcomes, and likelihood of negative outcomes combine to provide explanation for the actual outcome, in this situation: decision-making behaviors. The existing literature related to these concepts is described below.

Properties of the Person

Properties of the person are defined as participant's age, living status, race and/or ethnicity, marital status, public or private education, educational level, employment status, hours worked per week, and age of the baby. Additionally, each participant

corresponds with one nurse home visitor from the NFP at one particular NFP location. The nurse home visitor and the NFP site location are also considered properties of the person within the model.

Participant's Age

Pregnancy rates for adolescents between the ages of 15 and 19 are on the rise (Hamilton et al., 2009), and health outcomes are the poorest for adolescents between the ages of 10 and 14 (Menacker et al., 2004). Adolescents between the ages of 12 and 14 years of age have been described as less able to identify options, examine benefits and consequences of decisions, gauge alternatives to decisions and verify the accuracy of the information surrounding the decision-making process (Mann et al., 1989). Additionally, the age of adolescents 18 years and younger has been linked to unintended pregnancies (Chandra et al., 2005). It has been shown that younger women were more likely to not be married or have support from the father of the baby at time of delivery (Chandra et al., 2005). Age has also been identified as an important variable in other studies related to pregnancy (American Academy of Pediatrics, 2001; Dye, 2005; Mathews & MacDorman, 2008; Menacker et al., 2004; Ventura et al., 2001), adolescent pregnancy attitudes (Jaccard et al., 2003), decision-making (Bosma et al., 1996; Mann et al., 1989; Ormond et al., 1991), stressors (Forns, Balluerka, Gomez-Benito, Kirchner, & Amador, 2010; Huang, Guo, & Su, 2009; Tompsett, Fowler, & Toro, 2009), and social support (Bokhorst, Sumter, & Westenberg, 2010; del Valle, Bravo, & Lopez, 2010).

The adolescent, ages 12 to 18, is in Erikson's fifth developmental stage, *identity versus role confusion* (Erikson, 1963; Learning Theories Knowledgebase, 2008). During

this time frame, the adolescent must begin to focus on the development of his or her own identity, sexual changes, ideas, morality, and social networks. Adolescence is a period of rapid maturity and development, and through measuring age in smaller increments, more finite differences can be seen in the results. Bracketing of age ranges can lead to a loss of significant data due to developmental differences among ages of adolescents (Kaiser & Hays, 2005).

Age is a variable included in a substantial amount of the adolescent decision-making research and has been previously discussed in the above sections. Older adolescents (age 15) have been shown to score significantly higher than 13 year olds on metacognitive decision-making, task, and strategy knowledge and to have increased scores for positive decision-making behaviors and self-esteem as compared to 13 year olds (Ormond et al., 1991). In addition, no differences were found between the ages of adolescents and the “willingness to make choices, devise compromises, and show consistency of choices” (Mann et al., 1989, p. 265). Also, Commendador (2007) found that there was no relationship between age and the following variables: (a) global self-esteem, (b) decision-making self-esteem, (c) vigilance, (d) decision-making related to contraceptive use for sexually active females, and (e) maladaptive decision-making behaviors. Other researchers examining low-income single mothers of children ages two to six ($n = 205$) found no relationship between age and: (a) negative thinking, (b) chronic everyday stressors, (c) self-esteem, and (d) depression (Peden et al., 2004).

Age has been associated with decision-making behaviors and adolescents’ views of parental positions on decision-making issues with Italian adolescents ages 13 to 15 (n

= 500) (Bosma et al., 1996). Gardner and Steinberg (2005) examined peer influence on risk taking, risk preference, and risky decision-making among adolescents, youth, and adults in a randomized controlled study, and found risky decision-making behaviors decreased with increased age. Developmental changes have been demonstrated in formal and moral reasoning and social perspectives between the ages of childhood and mid-adolescence, with few differences between mid-adolescence and adulthood (Steinberg & Cauffman, 1996). However, developmental differences have been shown from childhood into adulthood related to long-term events and goals (Steinberg & Cauffman, 1996). Generational differences have been also noted in adolescent decision-making behaviors (Cebulla, 2009). In a longitudinal intervention, age of sexual partners (Ompad et al., 2006) and the adolescent's age have been shown as significant predictors for sexual behaviors and initiation of sexual intercourse in adolescents (Ashby et al., 2006; DiIorio et al., 2004; Halpern et al., 2000). Due to the inconsistencies in the literature regarding age as a variable that influences decision-making, further research is needed to support age as a predictor of decision-making behaviors for pregnant and parenting adolescents.

Living Status

Living arrangements have been shown to impact adolescents' attitudes on pregnancy (Jaccard et al., 2003), which may affect decision-making behaviors and social support levels. For instance, adolescents living with two parents in the home had higher scores of negative attitudes towards pregnancy than those living with only the mother (Jaccard et al., 2003).

Other researchers have examined sexual decision-making behaviors in adolescents in 1- and 2-parent households in inner city areas (Oman et al., 2005). Researchers included the variables: (a) role models, (b) family communication, (c) participation in athletics, (d) religion, (e) community involvement, (f) aspirations for the future, (g) responsible choices, (h) exercise, and (i) nutrition. Data were collected from the adolescents and one parent of the household ($n = 1253$ dyads) indicating that adolescents from 2-parent households with increased community involvement had the higher odds of never having sexual intercourse. Also, living arrangements have been examined by Brown and Mann (1991) and Rodriquez and Moore (1995). According to Brown and Mann (1991), it was found that adolescents in 1-parent households had higher levels of decision-making self-esteem, while Rodriquez and Moore (1995) demonstrated that adolescents in 2-parent households were more likely to report positive parental relationships which may impact social support. In one study, no differences were found for chronic stressors between 1- and 2-parent households (Hall & Farel, 1988). For children of adolescent mothers, positive preschool behaviors have been associated with the adolescent mother's residence with her own mother (G. Goodman & Aber, 2010).

Race or Ethnicity

In addition to living status, race and ethnicity play a role in social support and healthcare, specifically for health disparities. Race and ethnicity directly impact many aspects of health (Smedley et al., 2003; Ver Ploeg & Perrin, 2004) including areas such as social support (Koniak-Griffin & Lominska, 1993). Race and ethnicity have been shown to play a role in pregnancy outcomes for all ages of women (Chandra et al., 2005;

Dye, 2005; Mathews & MacDorman, 2008; Menacker et al., 2004; Ventura et al., 2001) and adolescent pregnancy attitudes (Jaccard et al., 2003).

In one study, pregnant adolescents who identified as Black had significantly lower total functional support than Whites as measured by the NSSQ (Koniak-Griffin & Lominska, 1993). Additionally, Black adolescents had the lowest total score for social support followed by Hispanic/Latino, while Whites had the highest total scores. Social support for Blacks and Whites in the study differed between the type of support; Black adolescents reported more family support than Whites or Hispanics/Latinos while White adolescents reported twice as high of levels of friend support as compared to Black adolescents (Koniak-Griffin & Lominska, 1993). Reported social support levels were more similar between White and Hispanic/Latino adolescents than compared to Black adolescents. There was no significant relationship in the study between the variables of total network and total loss and the variable of race or ethnicity.

When comparing the social support networks of Puerto Ricans to other ethnic groups described in the literature, Puerto Ricans of the Boston area reported half the number of social contacts (Falcon et al., 2009) as compared to previous normative research (Norbeck, 1995) indicating that race and ethnicity impact social support. In one study, no relationships were found between race and ethnicity and: (a) depressive symptoms, (b) negative thinking, and (c) chronic everyday stressors (Peden et al., 2004). Similarly, other researchers have examined race and ethnicity as a variable influencing social support. In a mixed methods study ($n = 114$), Norbeck and colleagues (1996) demonstrated that social support was effective in reducing the rate of low birth weight

infants for low income Black women from 22.4% (control group) to 9.1% (intervention group) through the use of four face to face social support sessions between the pregnant women and Registered Nurses. Focus groups were utilized to identify the social support needs of the women prior to the intervention, and measurement of social support used the NSSQ (Norbeck et al., 1996).

Additionally, health disparities related to birth rates are demonstrated by ethnicity. For adolescents ages 15 to 19, the 2005 birth rates per 1000 showed the highest incidence for Hispanics/Latino (81.7), followed by Blacks (60.9), American Indians or Alaska Natives (52.7), Whites (25.9), and Asians (17) (Martin et al., 2007). Nationally, the pregnancy rate for Hispanic/Latino adolescents has fallen more slowly during the period of 1990 to 2002 as compared to Blacks and Whites (Guttmacher Institute, 2006; Martin et al., 2007). The rate for Hispanics/Latinos fell 19% during this time frame as compared to a 40% decline for Blacks and a 34% decline for Whites (34%) (Guttmacher Institute, 2006; Martin et al., 2007). Because the statistics demonstrate disparities for groups of color, there is a critical need for health intervention programs that enhance decision-making behaviors for adolescents of color.

For some ethnic and racial groups, disparities have existed for long periods of time. According to the Agency for Health Care Research and Quality (2008), racial and ethnic minorities are more likely to experience poverty and health disparities when compared to non-Hispanic Whites. Additionally, these groups often are more likely to not have a high school education (Agency for Health Care Research and Quality, 2008). Despite efforts at data collection, interventions, and reduction of health disparities, many

of these groups remain at risk for certain health conditions and diseases. According to Ver Ploeg and Perrin (2004), key dimensions related to health disparities include acculturation, social economic position, language, race and ethnicity. A thorough description of patient level variables facilitates a better understanding of disparities in specific populations.

Furthermore, social support and decision-making are influenced by culture; culture is closely intertwined with race and ethnicity. Cultural influence is evidenced in differences among cultures in recognizing problems, making decisions in an individualistic versus collectivistic orientation, and qualities such as decisiveness versus contemplation (Greenberg, 2005). Cultural differences in decision-making behaviors have been reported in the literature (Friedman & Mann, 1993; Mann et al., 1998). Researchers have found race and ethnicity play roles in risk taking, risk preference, and risky decision-making behaviors (Friedman & Mann, 1993; Gardner & Steinberg, 2005; Males, 2009) including the type of sexual behaviors, such as intercourse, oral sex, or anal sex (Ompad et al., 2006).

Marital Status

Marital and relationship statuses have been shown to have an association with pregnancy expectations (Chandra et al., 2005), adolescent pregnancy attitudes (Jaccard et al., 2003), repeat pregnancies (American Academy of Pediatrics, 2001) and pregnancy outcomes (Dye, 2005; Mathews & MacDorman, 2008; Ventura et al., 2001). Researchers have demonstrated a relationship between decision-making behaviors and marital status (Gillmore et al., 1997). Norbeck (1996) also identified that marital social support levels

can directly impact outcomes depending on the adequacy of the spouse's social support. Significant correlations have been demonstrated by Bertero and Hjelm (2010) between marital status and social support aid.

Public or Private Education and Educational Levels

Social support can be influenced by the type of education an adolescent receives. Relationships between the type of education and social support have been described in the literature. Researchers have shown that types of education such as comprehensive schooling, vocational training, vocational diplomas, or college and university education have shown differences in mean scores on the NSSQ for emotional support, tangible support, and total network support (Koivula et al., 2002). Additionally, researchers have shown that decreased years of education were associated with negative life events and depressive symptoms (Falcon et al., 2009).

Moreover, increased education has been associated with decreased chronic stressors (Peden et al., 2004). Lower education has also been associated with higher levels of depression in mothers along with the variables of: (a) marital status (never married), (b) less than 25 years of age, (c) low socioeconomic status, and (d) race or ethnicity (Hall, 1990). Participants in this study reported if they attend public or private schooling to determine if the type of education impacts social support for adolescents who are parenting.

Several researchers have identified relationships between parental education and sexual decision-making behaviors (Cubbin, Santelli, Brindis, & Braveman, 2005; Santelli, Lowry, Brener, & Robin, 2000; Singh, Darroch, & Frost, 2001). Tunistra and

colleagues (2000) reported that higher levels of adolescents' education were associated with higher levels of self-esteem and competence in decision-making and lower levels of negative decision-making behaviors such as avoidance, panic, and impulsiveness. Also, researchers have demonstrated that maternal educational level is a critical factor in the mother's number of children and births (Chandra et al., 2005; Dye, 2005; Mathews & MacDorman, 2008), as well as the number of unintended births or having children 2 or more years prior to planned pregnancy (Chandra et al., 2005). Educational level is also associated with psychosocial outcomes of adolescent pregnancy (American Academy of Pediatrics, 1989), repeat pregnancies during adolescence (American Academy of Pediatrics, 2001), and adolescent pregnancy attitudes (Jaccard et al., 2003).

Employment status/hours worked per week. Decreased financial resources contribute to poorer health outcomes. Social economic position includes income, education, social standing, and assets (Ver Ploeg & Perrin, 2004). For adolescents, age is an existing and non-modifiable disparity. Because social economic position evolves over time, adolescents are automatically restricted in their social mobility. Adolescents have limited education up to high school levels, narrowing the job market and the source of income for young mothers. Without education and experience, higher paying jobs are difficult to obtain, also decreasing the social standing of the individual.

According to Travis, Bisogni, and Ranzenhofer (2010), maternal employment along with ethnicity, social support, and socioeconomic status play a role in adolescents' and family eating routines. Also, mother's employment status has been shown to be a significant predictor of unplanned pregnancy behaviors (Klitsch, 1991). For those

mothers who are employed and work outside the home, higher levels of support from extended family is often needed to maintain adequate levels of social support for the individual (Chandra et al., 2005). On the contrary, unemployment of teenage males has been associated with increased adolescent birth rates (Kirby, Coyle, & Gould., 2001). Richards, Papworth, Corbett, and Good (2007) have found that adolescent mothers' self-perspectives on adolescent pregnancy or parenting differed vastly among the variables of employment, social support, and coping strategies. Recent employment status of the mother post-delivery has also been demonstrated as one of the variables that impacts preschool children's aggressive behaviors (G. Goodman & Aber, 2010). In addition, for mothers with infants, the unemployment status for adolescents was much higher than compared to older mothers (American Academy of Pediatrics, 1989; Dye, 2005). Employment status has also been associated with decreased chronic everyday stressors (Peden et al., 2004). While there is some literature surrounding employment, further research is needed to determine the impact of employment on social support for adolescents who are parenting.

Age of baby. The age of the adolescent's child has not been used in literature related to decision-making. However, experience does impact decision-making and therefore it was reasonable to assume that the age of the child may influence positive or negative decision-making behaviors for the adolescent mother. Therefore, the age of the baby was included as one of the properties of the person within Norbeck's model of social support in this study.

Nurse home visitor. Each client in the NFP is assigned a nurse home visitor. There are four nurse home visitors per each NFP site location. Based on the hierarchical design of Norbeck's model of social support, the nurse home visitor would logically serve as a level within the model due to the potential of data clustering around each specific nurse home visitor. In this study, the nurse home visitor served as one of the properties of the person within Norbeck's model of social support.

NFP site location. In addition to the nurse home visitor, the NFP site location had potential for data clustering due to geographic boundaries and racial and ethnic compositions within the area. Although the individual NFP site locations have not been used within the current literature, in this study, the NFP site location served as one of the properties of the person within Norbeck's model of social support.

Properties of the Situation

Properties of the situation are defined as chronic everyday stressors. These stressors can include items such as financial concerns, role overload, employment or job concerns, parental worries, and/or interpersonal conflict.

Everyday stressors. In addition to social support, the environment and the stressors in an environment in which an adolescent develops impact adolescent decision-making. The environment also shapes the social support networks for individuals, and social support often acts as a buffer for stressors (Norbeck, 1989). For children and adolescents, the ability to adapt to stressors impacts their psychological development. Some researchers have concluded that the effects of everyday chronic stressors have

aggregate consequences for family health and functioning (Repetti, Wang, & Saxbe, 2009).

A direct inverse relationship between everyday stressors as measured by the Everyday Stressors Index (ESI) and social support has been shown in the literature; as social support decreases, everyday stressors increase (Hall et al., 1991). In a study of 225 low-income single mothers, it was found that social support and coping strategies did not shield the association between everyday stressors and reported depression scores (Hall et al., 1991). Additionally, increased levels of everyday stressors were associated with increased levels of avoidance coping (Hall et al., 1991). Focus groups have revealed that Black low-income women identified multiple everyday stressors during pregnancy including resources and social support needs (DeJoseph, Norbeck, Smith, & Miller, 1996). Other focus groups have identified that social support networks such as peers or family can create everyday stressors (Weitzman, Dunigan, Hawkins, Weitzman, & Levkoff, 2001). Community and home environments with caring adults and parents, authoritative parenting styles, smaller family size, self-efficacy, and neighborhood engagement have been associated with lower risks for adolescents in relation to school failure, unintended pregnancy or injury (Blum et al., 2002). Community involvement for adolescents decreases the odds of risky decision-making behaviors (Ashby et al., 2006), and for adolescents in two-parent households, community involvement increased the odds of never having sexual intercourse (Oman et al., 2005).

Poverty and lower levels of socio-economic status are often associated with higher rates of risky decision-making behaviors in adolescents (Males, 2009). It has been

demonstrated in the literature that for Puerto Ricans increased stress is associated with the variables of lower socio-economic status and levels of income below the national poverty line (Falcon et al., 2009). Stress has also been associated with higher levels of anxiety (Norbeck, 1989). On the contrary, Norbeck and Anderson (1989) found that life stress was not significantly associated with pregnancy outcomes for low-income women.

Using the ESI, researchers have examined self-esteem, everyday stressors, and depressive symptoms in postpartum women ($n = 738$) (Hall et al., 1996). Hall and colleagues found that increased everyday stressors predicted lower self-esteem and were associated with increased depression levels (Hall et al.). Of the everyday stressors measured, the stressors with the greatest impact on depression levels of the postpartum women were: (a) financial difficulties, (b) lack of employment, (c) concerns or worries about the child's or children's health, (d) transportation issues, and (e) problems with the child's or children's father (Hall et al.). In similar research, depressive symptoms in unmarried low-income women ($n = 111$) were strongly associated with specific stressors from the ESI: (a) lack of employment, (b) housing concerns, and (c) financial difficulties (Hall et al.), which may be a concern for pregnant and parenting adolescents who are often not married. Also in the same study, researchers found that everyday stressors were associated with depression for unmarried mothers, although no relationship was found between the two variables for participants who were married (Hall et al.). More specifically, for unmarried women who scored high on the ESI, they had 19 times the odds of depression than those with lower scores (Hall et al.). For married participants, the only relationship associated with depressive symptoms was the relationship between

the participant and the husband (Hall et al.). Additionally, participants in the study who were unemployed and reported low numbers of social support persons had 10 times the odds of depression as those participants who were unemployed but had higher numbers of social support networks (Hall et al.).

Other research has shown that ESI scores were correlated with depressive symptoms ($n = 115$) (Hall & Farel, 1988) and were significant predictors of depression ($n = 196$) for mothers of five and six year old children (Hall, 1990). In another study, increased depressive symptoms were associated with increased everyday stressors as measured by the ESI, decreased social resources, and increased avoidance coping (Hall et al., 1991). Predictors of depressive symptoms more specifically included: (a) inadequate family functioning, (b) decreased levels of tangible support, (c) increased chronic stressors as measured by the ESI, and (d) increased use of avoidance coping strategies (Hall et al.). When comparing the ESI scores of mothers who scored 15 or higher to mothers who scored 15 or lower on the ESI out of a score of 0 to 60, with higher scores indicating higher levels of chronic stress, mothers with the higher scores had three times the odds of having depressive symptoms (Hall, 1990). Additionally, mothers who scored 35 on the ESI had 31 times the odds of depressive symptoms as compared to mothers with low ESI scores (Hall).

Using the ESI, researchers have also shown that pregnant women who smoke in the first trimester have higher levels of everyday stressors than pregnant women who do not smoke, although no difference in stressors was shown in the third trimester (McMahan, Ashford, Hall, & Westneat, 2010). Also, the ESI has been used to examine

internalization and externalization of children's behavior with low-income single mothers with children ages two to six ($n = 205$) (Hall et al., 2008). Scores from the ESI were positively correlated with scores from the Beck Depression Inventory, negative thinking, internalization of children's behavior, and externalization of children's behavior (Hall et al.). Similarly, positive correlations have been found between the ESI and the Beck Depression Inventory, the Center for Epidemiology Studies – Depression Scale, and the Crandall Cognitive Inventory (negative thinking) (Peden et al., 2004).

Hall, Rayens, and Peden (2008) also found that chronic stressors as measured by the ESI had the largest effect on internalization and externalization of children's behaviors; scores from the ESI were negatively correlated with self-esteem (Peden et al., 2004). With other variables controlled in the model, chronic stressors and depressive symptoms accounted for 27% of the variance in internalization of children's behaviors and 21% of the variance for externalization of children's behaviors (Hall et al.). Also, chronic everyday stressors as measured by the ESI and self-esteem accounted for 75% of the variability in negative thinking in low-income single mothers of children ages two to six ($n = 205$) (Peden et al.). ESI scores have also been correlated with child behavior problems in mothers with five and six year old children, although there was no significant difference in the score for the ESI between 1- and 2-parent households (Hall & Farel, 1988). Specifically for child behavior, when comparing higher scores to mothers who scored five on the ESI (higher scores indicate higher levels of everyday chronic stressors), children of the mothers who scored 30 had 13 times the risks of behavior problems and children whose mothers scored 20 had nine times the risks of behavior

problems (Hall & Farel, 1988). In a randomized controlled trial of low-income single mothers with children ages two to six ($n = 136$), after a four to six week cognitive behavioral group intervention, researchers showed a significant decrease in chronic everyday stressors as measured by the ESI when compared to the control group during the same time frame (Peden et al., 2005).

Adequate or Inadequate Social Support

For adolescents in Erikson's developmental period of *identity versus role confusion*, social support is critical in shaping the adolescent's personal identity and growth (Erikson, 1963; Learning Theories Knowledgebase, 2008). For adolescents, researchers have shown a positive association between higher levels of social support and health self-management behaviors in the treatment of asthma ($r = 0.34$) (Sin et al., 2005). Additionally, social support has been shown to be significantly associated with overall health perception for women living with HIV ($n = 61$) (Kirksey et al., 2002). Sources of social support can be derived from a number of places including peers, family, relatives, partners, and other sources such as healthcare providers. Decreased levels of social support resources have been associated with higher scores of depressive symptoms and chronic everyday stressors while higher levels of social support have been associated with decreased levels of avoidance coping (Hall et al., 1991).

Peers can influence adolescents both positively and negatively (Mann, Harmoni, & Power, 1989). Lower levels of social support (Koivula et al., 2002; Norbeck, 1989) and stress (Norbeck, 1989) have been associated with higher levels of anxiety, which can increase health problems. Peer influence has been shown to be a strong predictor in poor

decision-making behaviors such as criminal activity (Modecki, 2009). Researchers have demonstrated a relationship between deviant peer influence and risky decision-making behaviors (Wolff & Crockett, 2011). Additionally, Wolff & Crockett found that deliberate positive decision-making behaviors were negatively associated with deviant peer influence.

Peer support has been used in adolescent decision-making programs such as *True Love Waits* in an effort to enhance the support for abstinence (Farrington, 1995). Researchers have studied the effect of peer influence on adolescent decision-making behaviors in many studies. Findings have included increased risky decision-making behaviors and less focus on consequences of actions within peer groups, although stronger associations of peer influence on risky decision-making was demonstrated for adolescents and youth as compared to adults (Gardner & Steinberg, 2005). More specifically, Gardner and Steinberg examined peer influence on risk taking, risk preference, and risky decision-making among adolescents ($n = 106$), ages 13 to 16, youth ($n = 105$), ages 18 to 22, and adults ($n = 95$), ages 24 and older, in a randomized controlled study. Participants ($n = 306$) were randomly assigned to groups, either alone or with two peers of the same age. Risk taking was measured by decision-making actions during risky situations in the video game sequence “Chicken.” Risk preference was measured with the Bentlin Risk Perception Measure, which assesses both risk perception and risk preference. Decision-making was measured via the Youth Decision-Making Questionnaire.

In addition, peer and partner influence as an external driver (King Jones, 2010), time alone with peers or members of the opposite sex (DiIorio et al., 2004), peer role models (Oman et al., 2005) and communication with other peers (Weiss, 2007) have been identified as influencing decision-making behaviors for adolescents' sexual behaviors. Peer influence and perceived peer norms impact intention of less intimate sexual decision-making behaviors in adolescents (McCabe & Killackey, 2004). Studies using magnetic resonance imaging have found cognitive differences among adolescents who exhibit high or low levels of resistance to peer influence (Grosbras et al., 2007). However, one study of high school students ages 14 to 18 ($n = 41$) indicated that perceived peer pressure influence only impacted adolescent decision-making a negligible amount when comparing engagement of adolescent decision-making behaviors in risky and beneficial situations (Benthin, Slovic, & Severson, 1993).

Many decisions that are made by adolescents are impacted by parents or other family members (Mann et al., 1989). In a study of male and female adolescents, mother and father support were both positively associated with deliberate positive decision-making behaviors (Wolff & Crockett, 2011). The family environment has been shown to impact adolescent decision-making behaviors (Brown & Mann, 1990). Lack of parental control and widespread opportunity to access risky behaviors has been noted in the literature as one cause of increased adolescent risky decision-making behaviors (Males, 2009; Pete & DeSantis, 1990). Adolescent females have identified mothers as a strong source of influence on health related decision-making behaviors, although the influence may change when sexually related decisions are present (McKee et al., 2004). Mothers

have been shown as strong sources of social support for low income pregnant women (Norbeck, 1989). When adolescents encountered sexual decisions, they reported seeking advice from non-mother female figures such as sisters or peers as a result of not wanting to harm the mother-daughter relationship and fear of impacting their social mobility (McKee et al., 2004). Focus groups with low-income mothers revealed four themes relating to advocates' social support in a community health promotion program: (a) respect, (b) trust, (c) friendship, and (d) family (familial type relationships) (Becker et al., 2004). Obviously, family influence is critical in socialization of adolescents. Racial socialization parenting practices were significant factors for adolescent decision-making related to increased numbers of teasing and intervening in group fights (Udell et al., 2008), while sexuality socialization was significant for pregnancy decision-making (Murry, 1995).

Family structure has been shown to impact decision-making behaviors in adolescents (Brown & Mann, 1990; Oman et al., 2005; Rodriguez & Moore, 1995). For increased levels of adolescents' involvement in family decision-making behaviors several associated factors have been identified: (a) gender (females are more involved in family decision-making than males), (b) adolescents from 1-parent households participated in greater numbers of family decision-making behaviors, and (c) family environments with structured rules promoted the likelihood of adolescent's participation in family decision-making (Brown & Mann). Factors that were not found to be associated with the participation of adolescents in family decision-making included child's age and family socioeconomic status (Brown & Mann).

The relationship between social support and race and ethnicity has been examined in the research; Black adolescents were less likely to have grown up with both parents in the household as compared to Hispanics/Latinos, but were less likely to have divorced parents than Whites (Rodriguez & Moore, 1995). In addition, Rodriguez and Moore found that Black adolescents had higher self-esteem and attended more religious activities than Whites or Hispanics/Latinos. Other research has shown that adolescent mothers that lived in a household with their parents had a negative association with repeated pregnancies ($p < .05$) (Gillmore et al., 1997).

In one study, researchers examined family decision-making patterns for informed consent in pediatric clinical trials (Snethen et al., 2006). Family units ($n = 14$) were identified as a father, mother, and adolescent ages eight to 20. Of the family units interviewed, analysis revealed that 11 of the families involved the children in the decision-making process in one of three decision-making styles: (a) informative ($n = 6$), (b) collaborative ($n = 3$), and (c) delegation ($n = 2$) (Snethen et al.). Informative decision-making styles were found in family units with children ages eight to 18 years of age; the child or adolescent participated in the learning process about the informed consent. For adolescents ages 17 to 20 years, the collaborative decision-making theme emerged, in which the parent empowered the child and allowed the child to make the final decision. In two cases, the adults gave the child/adolescent, ages 10 to 13 years, the responsibility for the decision-making process. Three of the family units did not involve the child, ages 10 to 14 years, in the decision-making process. This theme was termed exclusionary (Snethen et al.). Parental influence impacts adolescent decision-making, but

it is not an exclusive factor. Often, many other types of social support sources impact decision-making such as nurses or other healthcare professionals.

Nurse and nurse home visitor support. This study offers insight in the assessment of the perceived social support of the nurse home visitor for general decision-making behaviors of enrolled adolescents. While the NFP has been linked to independence and self-sufficiency among its participants (Olds, Kitzman et al., 2004; Olds et al., 2007), there is no research linking the social support of the nurse home visitor to decision-making behaviors. Decision-making behaviors have been linked with self-sufficiency (Becker, Kovach, & Gronseth, 2004), therefore indicating that the NFP may impact decision-making behaviors of parenting adolescents. In a focus group of low-income mothers enrolled in a health promotion program, the definition of self-sufficiency was when an individual “can define her own needs, decide what to do, implement that decision, and move on to meet the next need” (Becker et al., p. 332). In many instances, health promotion programs seek to achieve outcomes such as self-sufficiency.

Nurses and other healthcare professionals have been identified in the literature as sources of social support (Bussing et al., 2003; Gigliotti, 2004; Mechanic, 1977; Olds, Henderson, Tatelbaum et al., 1986; Peterson & Bredow, 2004; M. Stewart, 1993; M. Stewart & Tilden, 1995), and research has identified the need (Kirksey et al., 2002) and effectiveness (Olds, Henderson, Tatelbaum et al.) of nurses as social support sources in clinical practice. Many times, nurses or other healthcare professionals are the source of informational support during illness, disease, or pregnancy. Currently, the NFP has demonstrated the effectiveness of nurse home visitation for low-income mothers

(Eckenrode et al., 2010; Olds, Henderson, Tatelbaum et al.). Also, it has been shown that patients receiving low informational support had higher levels of fear (Koivula et al., 2002). Researchers have found that 70% to 90% of patients awaiting bypass grafting felt that information support from nurses was important or very important to their social support needs, with women reporting higher importance of informational support than men (Koivula et al.). The mean score of emotional support, tangible support, and total network support provided by healthcare providers in this study was 13.5, 4.8, and 5.95 respectively (Koivula et al.).

Several researchers have identified a deficit of nurse or healthcare provider support. For example, breast cancer researchers have shown that only three women out of a sample of 22 reported that nurses or other healthcare providers provided any social support for breast self-examination despite the fact that social support was significantly associated with the frequency of breast self-exams (Wagle et al., 1997). In a sample of 218 adults with cancer, 60 (27.5%) reported a healthcare professional as a source of social support (Bertero, 2000). Also, in relation to job stress of nurses, less than 1% of nurses reported a healthcare provider or nurse as a source of social support (Norbeck, 1985). For low-income pregnant women, 13 participants out of 101 identified a healthcare provider, nurse, or counselor as a source of social support during their pregnancies; of the 13 identified healthcare providers, only three participants listed nurses as sources of social support (Schaffer & Lia-Hoagberg, 1997).

In Finland, patients ($n = 207$) scheduled for coronary artery bypass grafting participated in a study to measure nurses' social support through the use of the Norbeck's

Social Support Questionnaire (NSSQ) (Koivula et al., 2002). In a sample of 207 patients, only 13 (6.3%) participants included healthcare professionals as sources of social support, while the majority of the participants perceived this support as important or very important (Koivula et al.). In this study, a large number of patients identified nurses' emotional aid (54% to 76%) and tangible aid (78% to 86%) as important or very important during their hospital experience. When measuring the patients' anticipated levels of nurses' social support, there was very little difference in the amount of social support wanted among emotional, tangible, and total network support (Koivula et al.). When examining stress, social support, and psychological distress of caregivers of the elderly, only 6.3% of the sample reported healthcare workers or counselors as sources of social support (Baillie, Norbeck, & Barnes, 1988). Bertero and Hjelm (2010) identified that healthcare providers in Sweden provide a tremendous amount of support for patients with diabetes mellitus. Of the sample of 33 participants, 26 healthcare providers and three counselors were identified as significant sources of social support.

It is clear that nurses and other healthcare providers are underutilized as social support sources. Utilization of nurses as social support sources for populations who may have limited access to adequate social support networks is critical in today's healthcare system. Researchers have demonstrated that nurses are effective in providing social support for these populations. For instance, Norbeck and colleagues (1996) have used Registered Nurses as sources of social support to reduce low birth weight rates of infants born to low-income Black women. In this study, the use of nurses as support networks significantly reduced the low birth weight rates for women in the intervention group as

compared to those in the control group. Nurses provided social support through four face-to-face sessions (Norbeck et al.).

Emotional support, aid, total function, total loss, and total network. The NSSQ measures several levels of social support including emotional support, aid, and the total network support. Previous research has examined different elements of the NSSQ, and the findings will be described in this section. In some of the studies, researchers used a total NSSQ score, rather than examining the subscales (Muller & Lemieux, 2000; Sin et al., 2005) or did not delineate the specific results for each subscale (Kirksey et al., 2002).

Using the NSSQ, Norbeck (1985) found that emotional support was significantly correlated with psychological symptoms, job dissatisfaction, perceived job stress, work experience, tangible support, work support, and total social support scores for nurses working in critical care units. Tangible support was also significantly correlated with work support, total social support, perceived job stress, and psychological symptoms (Norbeck, 1985). Other significant correlations included work support and: (a) total social support, (b) perceived job stress, and (c) psychological symptoms. Also, total social support was significantly associated with perceived job stress, job dissatisfaction, and psychological symptoms (Norbeck, 1985). Social support accounted for 4.9% of the variance in the model for job stress (Norbeck, 1985), indicating a relationship between social support and everyday stressors. These results indicate that there may be a relationship between social support of parenting adolescents and the chronic everyday stressors they experience.

In other research, Norbeck and Anderson (1989) measured the mean levels of emotional support, tangible support, network size, and individual support per social support source type for low-income pregnant women ($n = 208$) using the NSSQ. Kang and colleagues (1998) used the subscales (affect, affirmation, aid, total function, total support, and source of support) of the NSSQ to examine the relationship among social support and stress responses and immune function in asthmatic adolescents, discovering that social support does impact immune responses in asthmatic adolescents. Higher levels of emotional support scores on the NSSQ has been associated with lower levels of depression (Falcon, Todorova, & Tucker, 2009).

Researchers have used the NSSQ's subscales of affect, aid, and affirmation to measure social support and: (a) health behaviors and prenatal care for low-income pregnant women (Schaffer & Lia-Hoagberg, 1997) and (b) functional outcomes of elders with hip fractures at two months post discharge (Oh & Feldt, 2000). In the first study, social support from others not including the partner of the woman was positively correlated with prenatal health behaviors (Schaffer & Lia-Hoagberg). Additionally, social support from partners was significantly correlated with the adequacy of prenatal care. For participants in the study, partners provided the highest number of support sources, followed by mothers and siblings (Schaffer & Lia-Hoagberg). In the second study that investigated the recovery of hip fracture patients, only instrumental support and network size was found to be significant in the model, accounting for 3% and 6% of the variance, respectively (Oh & Feldt). Those patients with higher levels of instrumental

support and greater network size had increased recovery periods after the two months following discharge (Oh & Feldt, 2000).

Other researchers have shown differences between married and non-married individuals for the type of social support contacts within one's network (Norbeck, 1985), while some researchers have not demonstrated significant findings for social support levels between married and non-married individuals (Bertero, 2000). For low-income pregnant Black women, spousal support accounted for the highest amount of variance in the model for gestational complications followed by support from the woman's mother (Norbeck & Anderson, 1989). Specifically, social support from the woman's mother accounted for 33% of the variance in pregnancy complications and 14% of the variance for labor and delivery complications. In the same study, social support had the opposite effect for White women. The higher levels of social support were associated with substance abuse and pregnancy outcomes, indicating that for this population, social support may reinforce negative health behaviors (Norbeck & Anderson). For Hispanics/Latinos, no significant difference was noted in the findings (Norbeck & Anderson).

In another study, the scores for patients undergoing coronary artery bypass grafting identified that spouses provided the highest amount of emotional support, tangible support, and total network support, followed by children of the patients (Koivula et al., 2002). If partners and/or spouses provide the highest levels of support, it places adolescents at a disadvantage for social support networks, considering that many adolescents are not married and have not lived long enough to establish long-term

spousal relationships. Additionally, it is not feasible for adolescents to rely on support from children since it is not developmentally possible for adolescents to have children of older ages. The lack of partner or spousal support sustains the theory that nurses or other healthcare providers are highly needed in the population of adolescents who are pregnant or parenting. There is no evidence that nurses can replace the spousal support, however, higher levels of support in general are typically indicative of more positive outcomes as suggested by Norbeck's model of social support (1981).

Other sources of relationship social support have been explored in the literature. For adults with cancer in Sweden, social support from grandchildren was associated with higher levels of aid on the NSSQ (Bertero, 2000). In the same sample, social support from children had a positive significant relationship with the subscales: (a) emotional support, (b) total function and (c) total network (Bertero). Sources of social support are not the only variables to be considered. In one study, a relationship between the total network of support and race or ethnicity was not found (Koniak-Griffin & Lominska, 1993). Other researchers using the NSSQ have shown a relationship between gender and negative life events with tangible support and the frequency of contact with social support networks (Falcon et al., 2009).

Other subscales on the NSSQ include total loss and total function. In the literature, there are several research studies that have examined these subscales. For instance, greater numbers of loss of social support contacts were reported by older women participants than compared to younger women in a study of breast self-examination (Wagle et al., 1997). In another cancer study, total loss was examined

descriptively, reporting that 23.6% of the sample had experienced a significant loss within the past year (Bertero, 2000). In regards to race and ethnicity, no relationship between total loss and race or ethnicity was found when comparing three ethnic groups of adolescents who were pregnant (Koniak-Griffin & Lominska, 1993). Although no relationship was found between total loss and race or ethnicity, a significant difference between total function scores for Black and White pregnant adolescents was found (Koniak-Griffin & Lominska), with Blacks having significantly lower scores than Whites. In addition, no difference for total function scores was noted between Hispanics/Latinos and Whites or Hispanics/Latinos and Blacks (Koniak-Griffin & Lominska).

Likelihood of positive outcomes (positive decision-making behaviors). Mann and colleagues (1988) tested an interventional decision-making course with 8th and 10th grade adolescents in control and treatment groups to measure if decision-making behaviors improved. For 8th grade Australian adolescents, a significant difference was found between the groups for self-esteem, vigilance, and poor decision-making behaviors. In comparison, phase II of the study, using 10th grade adolescents as the sample found the decision-making course improved scores significantly for self-esteem and vigilance, while decreasing scores for poor decision-making behaviors; differences were noted between the control and treatment groups in both grade levels. While interventions for adolescents have various outcomes, the literature describes factors influencing decision-making as well as factors impacting specific decision-making behaviors.

Self-esteem. The concept of self-esteem is sometimes referred to as self-confidence in the literature. The Adolescent Decision Making Questionnaire (ADMQ) was adapted from the Flinders Decision Making Questionnaire. Research related to self-esteem of Australian adolescents ages 12 to 18 ($n = 584$) and parents ($n = 353$) has been measured with the Flinders Decision Making Questionnaire by Brown and Mann (1991). In this study, researchers found that parental decision-making self-esteem was associated with adolescent decision-making self-esteem, although the relationship was stronger for males as compared to females. Additionally, male adolescents' self-esteem correlated with both the father's and mother's self-esteem scores, while females' self-esteem only correlated with the father's self-esteem scores (Brown & Mann). Also, adolescents in one-parent households were more likely to have higher levels of self-esteem than those in two-parent households, indicating higher levels of responsibility in decision-making practices for these individuals (Brown & Mann). Similarly, levels of adolescents' autonomy have been correlated with specific situations of decision-making behaviors (Bosma et al., 1996).

The Flinders Decision Making Questionnaire and the Decision Behaviour Questionnaire have been used by researchers to examine decision-making among Japanese and Australian university students (Radford et al., 1993). The instruments have similar formats to the ADMQ, and the constructs of decision-making self-esteem, decision-making stress, complacency, avoidance, and hypervigilance were measured in this population (Radford et al.). Researchers found that decision-making self-esteem was

negatively correlated with decision-making stress, complacency, avoidance, and hypervigilance (Radford et al.).

Additionally, the ADMQ subscale of self-esteem has been positively correlated with knowledge of decision-making including areas such as personal knowledge, tasks, and strategies for the metacognitive decision-making process (Ormond et al., 1991). Researchers have demonstrated associations between decreased levels of self-esteem and low socio-economic levels as well as perceived lower levels of social support (Veselska et al., 2009). This information automatically places the low-income clients in the NFP more at risk for lower self-esteem levels.

Moreover, using the ADMQ with Hawaiian female adolescents ages 14 to 17 ($n = 98$), researchers have found that decision-making self-esteem was positively correlated with global self-esteem (Commendador, 2007). Other relationships found with self-confidence using the ADMQ with psychology students (mean age = 20, $n = 44$) indicated positive correlations with the personality trait of mediating reactions to rewards or other appealing stimuli and positive impulsive reactions (Franken & Muris, 2005). Negative correlations were found between self-confidence on the ADMQ and both the subscale of avoidance and the personality trait of mediating reactions to adverse stimuli (Franken & Muris).

In a 1993 study, cultural differences were found for decision-making self-esteem; Japanese university students scored lower than Australian university students in the subscale of decision-making self-esteem (Radford et al., 1993). Also, a significant difference was noted in self-esteem for gender; Australian males scored significantly

higher on self-esteem than Australian females, while Japanese females scored higher than Japanese males, although the difference was not significant (Radford et al.). A relationship between age and decision-making self-esteem was not found by Commendador (2007). Another study in Australia has supported that males have increased scores for decision-making self-esteem as compared to females (Ormond et al., 1991). In a revised version of the Flinders Decision Making Questionnaire, researchers examined decision-making behaviors among college students in the United States ($n = 475$), Australia ($n = 262$), New Zealand ($n = 260$), Japan ($n = 359$), Hong Kong ($n = 281$), and Taiwan ($n = 414$) (Mann et al., 1998). Using the revised version titled the Melbourne Decision Making Questionnaire, it was found that the American, Australian, and New Zealand adolescents had significantly higher levels of self-confidence in decision-making, while adolescents in Japan had the lowest self-confidence scores (Mann et al.).

Using the ADMQ in the Netherlands, Tunistra and colleagues (2000) have found that self-esteem and competence in decision-making were positively associated with increased education levels and gender; males had higher levels of self-confidence as compared to females. Using specific decision-making educational courses, researchers have found that adolescents both 12 ($n = 40$) and 15 years ($n = 152$) of age demonstrated significant differences in improvement of decision-making self-esteem and decision-making habits as compared to the same age students in control groups ($n = 51$, $n = 220$, respectively) (Mann et al., 1988). For the 12 year old students in the study, decision-making knowledge was also significantly different from the control group (Mann et al., 1988).

In other research using the ADMQ, older adolescents (15 years of age) ($n = 41$) had increased levels of decision-making competence and self-esteem when compared to 13 year old adolescents ($n = 43$) (Ormond et al., 1991). In addition to in the Netherlands, the ADMQ has been tested in Israeli ($n = 1028$) and Australian ($n = 428$) adolescents between the ages of 13 and 14 in a comparative study of cultures and it was also found that males had higher levels of self-esteem than females (Friedman & Mann, 1993). This finding was shown to remain true in a larger study of six countries (Mann et al., 1998). Moreover, Israeli adolescents were significantly higher than Australian adolescents in decision-making self-esteem (Friedman & Mann). Furthermore, researchers have found no relationship between competence in decision-making for adolescents and the type of family structure, either 1- or 2-parent households (Brown & Mann, 1990). Decision-making self-esteem is a single subscale of the ADMQ; vigilance is another construct that identifies positive decision-making for adolescents although a positive correlation has been demonstrated between the two subscales (Commendador, 2007).

Vigilance. Vigilance is a subscale of the ADMQ, indicating positive decision-making behaviors. In the study by Brown and Mann (1991), mothers' positive decision-making behaviors were significantly associated with young female adolescents' vigilant decision-making behaviors. In two cross cultural samples using the ADMQ and the Melbourne Decision Making Questionnaire, Friedman and Mann (1993) and Mann and colleagues (1998) found that vigilance is positively correlated with higher levels of self-esteem, indicating that better adolescent decision makers have higher levels of self-esteem or confidence. Vigilant decision-making behaviors have also been positively

correlated with global self-esteem (Commendador, 2007). In a study using the ADMQ, Israeli adolescents scored significantly higher than Australian adolescents in the vigilance subscale (Friedman & Mann). Researchers using the Melbourne Decision Making Questionnaire did not find any significant differences for the category of vigilance among gender or across cultures (Mann et al.).

Vigilance has also been measured using the Flinders Decision Making Questionnaire. In a sample of 585 Australian adolescents ages 12 to 18 years, higher levels of vigilant decision-making was associated with gender (males had higher levels of vigilance), increased family socioeconomic status, higher levels of family cohesion, strong communication patterns between the parent and adolescent, and effective parental conflict resolution (Brown & Mann, 1990). In another study, gender was not associated with vigilance scores on the ADMQ (Ormond et al., 1991). Vigilance scores were not associated with family size (Brown & Mann) or age (Brown & Mann; Commendador, 2007). When placed into a multiple regression model, parental conflict resolution and family cohesion were the only two significant predictors of vigilant decision-making behavior and accounted for 12% of the variance (Brown & Mann). Using the ADMQ, vigilance has been positively correlated with task and strategy knowledge of decision-making processes (Ormond et al., 1991).

Age also impacts vigilance scores; in one study, older adolescents had higher scores for the subscale of vigilance than did younger adolescents (Ormond et al., 1991). Sample means for vigilance in 12 and 15 years old adolescents receiving a decision-making course have been reported as 9.97 and 11.06 respectively, as compared to the

control groups of 8.32 and 9.8 respectively, where 18 is the highest score possible (Mann et al., 1988). Another sample mean for vigilant scores on the ADMQ reported in the literature for female adolescents in a study of contraception usage and decision-making was 10.29 (Commendador, 2007). While adolescents make many positive decisions, the contrary is often true, and frequent negative decision-making behaviors occur in this population. The subscale of vigilance has been negatively correlated with maladaptive decision-making behavior scores (Commendador). The AMDQ measures negative decision-making through a subscale titled maladaptive decision-making.

Likelihood of negative outcomes (maladaptive decision-making behaviors).

Maladaptive decision-making behaviors are indicative of less competent decision-making. In the literature, maladaptive decision-making behaviors have been negatively correlated with self-esteem using decision-making measurements (Commendador, 2007; Mann et al., 1998), global self-esteem (Commendador), vigilant decision-making behaviors (Commendador), and knowledge of decision-making (Ormond et al., 1991). Younger adolescents have been shown to have increased scores on maladaptive behaviors when compared to older adolescents although no differences were shown for gender (Ormond et al.), although one study indicated that there was no relationship between age and maladaptive decision-making behaviors (Commendador). Commendador also found that there was a negative correlation and relationship between maladaptive decision-making scores and contraception usage in sexually active females, indicating that for each one point increase in the maladaptive score, there is a 7% decrease in the odds of contraception use for sexually active females in Hawaii.

Complacency. Complacency is another subscale of the ADMQ and it has been negatively correlated with self-esteem scores on the ADMQ (Friedman & Mann, 1993) and on the Flinders Decision Making Questionnaire (Radford et al., 1993). Complacency indicates decision-making behaviors where alternatives and consequences are ignored and decisions are made without forethought or when any suggestion changes the course of the decision-making (Commendador, 2011). Commendador suggests that complacency in adolescent decision-making increases with age. Tunistra and colleagues (2000) reported that in Dutch adolescents, there were gender differences for the subscale of complacency. Male adolescents were significantly higher in complacency levels of decision-making as compared to females (Friedman & Mann; Tuinstra et al.). Radford and colleagues have also found a significant difference in gender for Japanese university students; Japanese males had significantly higher scores in complacency than Japanese females. In a comparison of cultures, Australian university students scored lower in complacency and decision-making stress than Japanese students (Radford et al.). In addition, decreased levels of complacency were associated with increased education levels (Tuinstra et al.). Also complacency in decision-making was associated with peer group pressure (Tuinstra et al.).

Panic. Panic is an additional subscale of the maladaptive decision-making behaviors of the ADMQ, and sometimes referred to as hypervigilance. Panic refers to decision-making behaviors that occur in a hurry or impulsively (Commendador, 2011). While peer group pressure impacted complacency in decision-making, it was also associated with panic (Tuinstra et al., 2000). Tunistra and colleagues also discovered

differences in gender and educational differences for panic. Female adolescents were found to have higher levels of panic than males (Friedman & Mann, 1993; Tuinstra et al.) and adolescents with higher levels of education were found to have decreased levels of panic as part of the decision-making process (Tuinstra et al.). Friedman and Mann reported the subscale of panic was negatively correlated with self-confidence in both Australian and Israeli adolescents.

Among other cultures, Asians were found to have significantly higher levels of panic (or hypervigilance) as compared to Western countries with the Japanese reporting the highest levels of panic among the six countries included in the study (Mann et al., 1998). Japanese university students also scored higher in the subscale of hypervigilance than Australian university students in a study by Radford and colleagues (1993). Using the ADMQ, researchers have shown that the subscale of panic has been positively correlated with the subscale of avoidance and individual personality that mediates reactions to adverse stimuli (Franken & Muris, 2005). On the contrary, it was negatively correlated with positive impulsive reactions and the ADMQ's subscale of self-confidence (decision-making self-esteem) (Franken & Muris).

Cop out. The subscale of cop out is comprised of three additional subscales: (a) defensive avoidance, (b) put it off, and (c) pass it on. The subscale of cop out refers to individuals who shift the responsibility of decision-making to someone else or when the decision-maker chooses to procrastinate rather than follow through with the decision-making behavior (Commendador, 2011). In previous research, evasiveness or avoidance has been used as a comparable term to cop out. The term evasiveness was used by

researchers in the Netherlands who reported that males have higher levels of evasiveness or avoidance than female adolescent counterparts (Tuinstra et al., 2000). Evasiveness or avoidance was significantly associated with social pressure and decreased levels of avoidance were associated with increased educational levels (Tuinstra et al.). Using the ADMQ, avoidance has been positively correlated with the personality trait of mediating reactions to aversive stimuli and negatively correlated to positive impulsive reactions (Franken & Muris, 2005).

Similar to the subscales of complacency and panic, the subscale of cop out has been found to be negatively associated with self-esteem (Radford et al., 1993) or self-confidence (Friedman & Mann, 1993), indicating that lower levels of adolescents' self-esteem may impact negative decision-making behaviors. In the study by Friedman and Mann, researchers found that Israeli adolescents scored significantly lower on the category of evasiveness than Australian adolescents. Radford and colleagues compared Japanese and Australian university students, finding that the Japanese students scored higher in avoidance decision-making coping behaviors than the Australians.

In another cross-cultural study, researchers found that Asians as compared to people from Western cultures had higher levels of avoidance, which was termed buck-passing in the study (Mann et al., 1998). Additionally, students from Japan reported the highest level of avoidance as compared to students from the United States, Australia, New Zealand, Hong Kong, and Taiwan (Mann et al.). While there is a significant amount of literature regarding the subscales of the ADMQ and adolescent decision-making,

further research is needed to examine the other factors that influence adolescent decision-making behaviors and the outcomes of the ADMQ.

Gaps in the Literature

Despite the wealth of knowledge in adolescent decision-making, many areas remain ambiguous. While there is a plethora of information about social support and the positive impacts of social support networks, one study identified that social support did not buffer the effects of negative life events and concluded that in fact, social support may be perceived as a stressor in some populations (Falcon et al., 2009). Further research is needed to clarify the relationship between social support and everyday stressors for adolescents who are pregnant or parenting. Another area identified in the literature for further research includes charting basic brain development in adolescence and clarifying the individual trait and environmental factors associated with adolescent brain development (Masten, 2004). Currently, scientists have established a knowledge base for adolescent brain function and structure during this developmental stage, but there is little scientific knowledge as to how the anatomy and development of the brain during adolescence impacts decision-making behaviors (Males, 2009). Some areas that are not currently addressed in the literature that need further attention include the effect of mentorship programs and nurse visitation on adolescent decision-making behaviors and depression.

The causes of risky adolescent decision-making are not well understood, and there is limited research on how to improve risky adolescent decision-making behaviors. If the relationship between influencing variables and decision-making behaviors were better

understood, then programs could be designed to manipulate variables as appropriate to create positive outcomes. Also, there is no current research on changes of adolescent decision-making behaviors for pregnant adolescents once they have given birth. Future research should include testing of a range of demographic variables and environmental stressors on adolescent decision-making behaviors. Consistency in measurement tools is needed for generalizability of findings. Also, researchers should examine broader views of adolescent decision-making in an effort to create and support interventions that foster positive adolescent decision-making behaviors in all-encompassing context rather than just focusing on specific risky decision-making behaviors such as contraceptive use or sexual activity decision-making.

Current interventional programs often do not address factors that are clearly shown as antecedents for risky behaviors such as poverty and lower socio-economic status. Additionally, the use of interventional programs to reduce risk taking and poor decision-making behaviors have had limited success indicating that increased knowledge does not equate to improved decision-making behaviors. Knowledge alone may not be sufficient in changing behaviors, but programs that include decision-making and goal attainment strategies and cognitive determinants are likely to be effective in behavior change (Schaalma et al., 2004). These programs are often misguided strategies focusing on adolescents' perceptions of risk and vulnerability, which have been shown in the literature to be similar to adults. Evaluation of programs is critical, and continued implementation of programs that are not efficient or effective is a misuse of time, resources, and dollars.

Much of the research on adolescent decision-making focuses on females and sexual behaviors rather than general decision-making. Also, the literature demonstrates that there is incongruence among adults' and adolescents' priority areas of health concern, yet little to no research focuses on areas that adolescents have regarded as important (Millstein & Halpern-Felsher, 2002). Ambivalent adult attitudes and cultures within the United States often contribute to poor decision-making in the adolescent population (Brindis, 1999). These attitudes are augmented by the lack of autonomy adults award to adolescents and children. The process of teaching decision-making begins in childhood and develops over time. It is critical to address social meaning and the marketing behind the behaviors and/or associated products early in life in order to change behaviors of future adolescents. The images and meaning portrayed with risky behaviors directly influence adolescents' decisions (Gerrard et al., 2008). Conscious decisions must be made on the part of adults in conveying clear messages to adolescents and children through meaningful social context and appropriate spokespersons.

Finally, the definition of risky behaviors or the term risk are not congruent among adolescents and adults, and due to the incongruence, adolescents are often depicted in a negative manner. Often adolescents are described as a risky group that creates negative outcomes for themselves. Furthermore, the terms in this area of research are vague with the exception of adolescent sexual decision-making which has been defined specifically in the literature. The majority of research has specifically focused on sexual behaviors, but has not encompassed the broader component of adolescent decision-making. By

addressing adolescent decision-making overall, the effects of positive decision-making behaviors can be far reaching outside the areas of adolescent pregnancy.

Discussion

The workings of the research community can create an unbalanced picture of adolescents, even when its results are communicated accurately. Adolescents often are studied because they face or pose problems in society. As a result, they can be unduly seen as threatened or threatening. Moreover, that research often is focused on a single problem behavior or risk factor, encouraging sweeping generalizations and simplistic solutions. (Nightingale & Fischhoff, 2002, p. 8)

The solutions to adolescent decision-making are not simplistic and require effort on the part of nursing, healthcare, policy makers, parents, and enforcement agencies. Future research is needed for adolescent decision-making behaviors and other adolescent concerns, but before actions are taken, careful consideration to proper methodologies must be given to provide researchers and society with the most accurate and useful information in order to improve the health and outcomes for this population.

As nurses and researchers, it is our duty to address areas of concern for populations, especially vulnerable groups. Adolescent decision-making is a dynamic process, and therefore methodologies and future research should adapt to address generational differences. This process is multi-factorial and much research is still needed to complete our understanding of adolescent decision-making. In an effort to enhance health outcomes for adolescents, nurses need to step into roles of advocates, researchers, and policy makers in order to make a difference. Our goal should not only be to reduce adolescent pregnancy, but to promote the maximum potential of each adolescent, therefore improving his or her individual future and ensuring a positive future for society.

This goal can be achieved through many strategies: (a) implementation of federal policies that define the age of majority and emancipation status, (b) decreasing opportunities for risk for adolescents, (c) establishment of age and access restrictions of products that promote risky adolescent decision-making behaviors, (d) providing support interventions proven effective and efficient, and (e) promotion of programs that educate parents and adolescents in child rearing practices in order to suspend the cycle of risky adolescent decision-making and the associated outcomes. A first step toward the improvement of health for adolescents who are pregnant and parenting is an examination of the factors that impact adolescent decision-making that have not been clearly delineated in the literature. Through research relating to undetermined factors such as the nurse home visitor social support and length of time in the NFP program, further evaluation of current health promotion programs such as the NFP and the impact on adolescents' decision-making behaviors may greatly contribute to the body of knowledge for adolescent decision-making behaviors and potentially provide additional support for current and evolving programs. The purpose of this quantitative cross-sectional study was to describe the decision-making behaviors and explore predictive variables that may influence decision-making behaviors for parenting and pregnant adolescents enrolled in the NFP.

CHAPTER III

METHODS

The principal investigator (PI) investigated the decision-making behaviors, perceptions of social support, and the everyday chronic stressors of parenting adolescents. In this chapter, the methods of the pilot study (Lane & Kohlenberg, 2011) and the larger study are described. The methods and data analyses for each research question are explained and discussed. Protection of human subjects and limitations of both studies are described.

Purpose

In this study, the PI set out to describe the decision-making behaviors of parenting adolescent females enrolled in the Nurse-Family Partnership (NFP). The NFP is a nurse home visitation program that focuses on health promotion for low-income first-time adolescent mothers and their children through goal setting and mentorship (Nurse-Family Partnership, 2011f, 2011h). Additionally, the PI explored predictive variables that may influence decision-making behaviors in parenting adolescents enrolled in the NFP. Another aim of the quantitative cross-sectional study was to explore demographic variables, social support, everyday stressors, and decision-making behaviors reported by parenting adolescents. Furthermore, the PI assessed the participants' perceived levels of nurse home visitor social support to determine if a relationship existed between the perceived social support and the self-reported adolescents' decision-making behaviors.

For the study, demographic variables included: (a) the participant's age, (b) living status, (c) race/ethnicity, (d) marital status, (e) public or private education, (f) educational level, (g) employment status, (h) hours worked per week, (i) age of the baby, (j) nurse home visitor and (k) NFP site location. Decision-making behaviors were subdivided into: (a) self-esteem, (b) vigilance (positive decision-making behaviors) and (c) maladaptive (negative) decision-making behaviors; the maladaptive behaviors were further condensed into subscales for complacency, cop-out, and panic. In addition to demographic variables and decision-making, social support and everyday stressors were explored. Social support was measured through the variables of emotional support, aid, total function, total network, and total loss. More specifically, the participants' perceived social support levels and network properties of the nurse home visitor were measured. Everyday stressors were measured through self-report of resources, transportation, responsibilities, concerns, and problems.

Instruments

The study utilized four instruments to measure the identified concepts: (a) Adolescent Decision Making Questionnaire (ADMQ) (1989) (Appendix A), (b) Norbeck's Social Support Questionnaire (NSSQ) (1995) (Appendix B), (c) the Everyday Stressors Index (ESI) (1983) (Appendix C) and (d) Adolescent Demographic Questionnaire (ADQ) (2009) (Appendix D). Cronbach's alpha coefficients were determined for each instrument. Permission for use of the NSSQ may be found via the internet while permission for use of the ADMQ and the ESI must be obtained from Dr. Leon Mann and Dr. Lynne Hall.

Adolescent Decision Making Questionnaire

In the study, the PI explored decision-making behaviors reported by parenting adolescents who were participants in a nurse home visitation program that focused on low-income first-time mothers and their children. While most behavioral concepts are considered to be moderately abstract (Waltz, Strickland, & Lenz, 2005), observation or self-report are effective ways of measurement. In the study, self-report was used for all variables. Often decision-making behaviors cannot be observed directly, and therefore measurement using self-report provided “the most direct approach to the determination of affect” and was most appropriate in the study for measurement of the variables identified (Waltz et al., p. 10).

The ADMQ was selected for use in the study to measure the dependent variable, decision-making behaviors. Permission for use was obtained through Dr. Leon Mann (Leon Mann, personal communication, November 10, 2008). Derived from the Flinders Decision Making Questionnaires I and II and established on the theoretical basis of Janis’ and Mann’s conflict model of decision-making (Janis & Mann, 1977; National Network for Child Care, 1998), the ADMQ has been tailored for adolescents and tested in this adolescent population (Brown & Mann, 1990; Mann et al., 1998). The ADMQ is a 30-item, 4-point Likert scale containing six self-esteem items and 24 decision-making items. Of the 24 decision-making items, the responses are coded as vigilance, complacency, cop out, and panic. The category of cop out is further divided into three subscales: (a) defensive avoidance, (b) put it off, and (c) pass it on. Complacency, cop out, and panic are all indicative of negative decision-making behaviors. Vigilance and self-esteem

identify positive decision-making behaviors. Higher scores for each of the categories indicate higher levels of positive or negative decision-making behaviors, respectively (Mann et al.).

The response set for the ADMQ includes: (a) not at all true for me, (b) sometimes true, (c) often true, and (d) almost always true. The scores are separated into adaptive (positive) and maladaptive (negative) coping behaviors and are calculated and measured as continuous variables (see Table 1). While the tool did not have a summative score for all items, summative scores were tabulated under specific categories that are identified as: (a) self-esteem, (b) vigilance, (c) complacency, (d) panic, and (e) cop out (Mann et al., 1988). The ADMQ is written at a 5.6 reading grade level confirmed by the Flesch Reading Ease and Flesch-Kincaid Scales.

Table 1

Scoring for the ADMQ

Variables	Number of items	Possible score
Self-esteem	6	0 – 18
Vigilance (adaptive/positive decision-making behaviors)	6	0 – 18
Complacency	6	0 – 18
Panic	6	0 – 18
Cop out ^a	6	0 – 18
Defensive avoidance	2	0 – 6
Put it off	2	0 – 6
Pass it on	2	0 – 6
Maladaptive ** (negative decision-making behaviors)	18	0 – 54

^a Combination of the Categories: (a) Defensive Avoidance, (b) Put It Off and (c) Pass It On

^b Combination of the Categories: (a) Complacency, (b) Panic and (c) Cop Out

Researchers have tested the Flinders Decision Making Questionnaire, the instrument from which the ADMQ was derived, in six countries using a sample of undergraduate first year psychology and behavioral science students ($n = 2051$) in order to test Janis' and Mann's conflict model of decision-making (Mann, Burnett, Radford, & Ford, 1997). Results of the confirmatory factor analysis indicated a revised model was needed for a parsimonious fit, including the established subsets of vigilance and procrastination, and two new subsets of hypervigilance and buck-passing.

Specifically for the ADMQ, psychometric properties for the instrument have been discussed in the literature (Lane, 2010). The psychometric properties are well-established including test-retest (Friedman & Mann, 1993), temporal stability (Friedman & Mann), validity (Commendador, 2007; 2011; Franken & Muris, 2005), content validity (Janis & Mann, 1977; Tuinstra et al., 2000), and factor analyses (Tuinstra et al.). The scale has high reliability as evidenced by Cronbach's alpha coefficients ranging from 0.52 to 0.827 (Bosma et al., 1996; Brown & Mann, 1991; Commendador, 2007; 2011; Friedman & Mann; Mann et al., 1988; National Network for Child Care, 1998; Ormond et al., 1991; Radford et al., 1993). Furthermore, the literature related to the ADMQ offers face validity, but does not provide insight into inter-rater reliability or convergent reliability. The ADMQ's strengths include wide usage, strong theoretical design, and moderate to high reported Cronbach's alpha coefficients (Lane, 2010). In contrast, the weaknesses include the lack of random sampling when testing the instrument and rare use of the instrument within the US, decreasing generalizability and creating potential concerns related to culture and language (Lane, 2010).

Norbeck's Social Support Questionnaire

The NSSQ is a 5-page instrument that uses an 11-item format measuring social support through the number of self-reported support persons, loss of support, levels of emotional support and aid, functional support, and network support received by the participant through a 5-point Likert scale for the majority of the items (The University of California: San Francisco, 2003). For this study, specific categories for nurse home visitor aid, emotional support, and total function were created and measured independently of the other variables. Norbeck and Anderson (1989) have used the NSSQ to identify specific support for low-income pregnant women by selecting out the support from the respondents' mother. Calculation for the variables' scores are further described in Table 2.

Responses for each measurement of social support are associated with specific individuals that the participant identifies as a social support in his/her life. Each respondent listed up to 24 individuals who provided social support. The respondent then identified the type of relationship between the respondent and the identified individual such as mother, friend, nurse, etc. Items one through eight offered a corresponding response line for each of the identified 24 individuals. The number of identified individuals has been limited in other research to 16 (Falcon et al., 2009), or 20 (Muller & Lemieux, 2000), and the instrument has been shortened (Oh & Feldt, 2000). The NSSQ has previously been used successfully with adolescents (Kang et al., 1998; Sin et al., 2005).

Table 2

Scoring for the NSSQ

Variable	Description/formula
Number in Network	Total Number of Identified Individuals Providing Social Support Possible Range (0 to 24)
Emotional Support	Total of Items 1 – 4 Possible Range (0 to 384)
Aid	Total of Items 5 & 6 Possible Range (0 to 192)
Total Function	Emotional Support + Aid Possible Range (0 to 576)
Total Network	Total Number of Individuals Listed + Item 7 & 8 Possible Range (0 to 264)
Total Loss	Total of Items 9, 9a, & 9b
Nurse Home Visitor Emotional Support	Total of Items 1 – 4 Possible Range (0 to 16) ^a
Nurse Home Visitor Aid	Total of Items 5 & 6 Possible Range (0 to 8) ^a
Nurse Home Visitor Total Function Score	Nurse Home Visitor Emotional Support + Nurse Home Visitor Aid Possible Range (0 to 24) ^a

^a This is the possible score if only one nurse home visitor is identified. The score can increase if multiple nurse home visitors and other NFP staff are reported by the participant.

Items on the NSSQ include:

1. How much does this person make you feel liked or loved?
2. How much does this person make you feel respected or admired?
3. How much can you confide in this person?
4. How much does this person agree with or support your actions and thoughts?
5. If you needed to borrow \$10, a ride to the doctor, or some other immediate help, how much could this person usually help?
6. If you were confined to bed for several weeks, how much could this person help you?
7. How long have you known this person?
8. How frequently do you have contact with this person? (Phone calls, visits, or letters)
9. During the past year, have you lost any important relationships due to moving, a job change, divorce or separation, death, or some other reason?
 - 9a. Please indicate the number of persons from each category that are no longer available to you.
 - 9b. Overall, how much support was provided by these people who are no longer available to you?

Responses for items one through six are measured with a 5-point Likert scale.

Items one through six included the following response set: (a) not at all, (b) a little, (c) moderately, (d) quite a bit and (e) a great deal (The University of California: San Francisco, 2003). Item numbers seven and eight had varying responses. Item seven

consisted of interval choices for the length of time in which the participant had known the individual who provided social support. Item eight identified the level frequency of contact with the supportive individual ranging from daily to once a year or less. (The University of California: San Francisco, 2003). Item nine related to social support loss. If the respondent identified a loss in her social support network, then the respondent answered items 9a and 9b which address the quantity and quality of social support lost, respectively. Coding for item nine included 0 = No, and 1 = Yes. Item 9a was coded as a continuous variable; item 9b uses the same Likert scoring as items one through six.

There are subscales of the NSSQ: (a) emotional support, (b) aid, (c) total function, (d) total network, and (e) total loss. Emotional support was measured by a cumulative score of items one, two, three, and four. Scores from items five and six are combined to create the subscale of aid. Total function for social support was determined by adding the subscales of emotional support and aid. Total network was measured by combining the number of individuals listed as social support persons with the scores from items seven and eight. Total loss was the combined score of items nine, 9a, and 9b. Higher scores for the subscales of emotional support, aid, total function, and total network indicated higher levels of social support for the respondent. Higher scores for the subscale of total loss indicated higher levels of loss for the respondent.

The instrument owner, Jane Norbeck, offers free use of the NSSQ (<http://nurseweb.ucsf.edu/www/ffnorb.htm>). The instrument was originally developed by Norbeck in 1980 and was revised in 1982 and 1995 (The University of California: San Francisco, 2003).

NSSQ's internal consistency has been measured with correlations between items ranging from 0.69 to 0.97 (Kang et al., 1998; Norbeck & Anderson, 1989; Norbeck, Lindsey, & Carrieri, 1981; Norbeck, Lindsey, & Carrieri, 1983) and 0.85 to 0.98 (Koivula et al., 2002). Test-retest demonstrated correlations between 0.86 to 0.92 (Norbeck et al., 1981; Norbeck et al., 1983), 0.90 to 0.96 (Byers & Mullis, 1987), and 0.85 to 0.92 (Norbeck & Anderson). Construct, concurrent, predictive validity (Norbeck, 1984; Norbeck & Anderson; Norbeck et al., 1983), and factor analyses (Gigliotti, 2002; Norbeck, 1995; The University of California: San Francisco, 2003) have been demonstrated for the NSSQ. Strong correlations among the subsets of the instruments have been demonstrated by Norbeck and colleagues (Norbeck et al., 1981; Norbeck et al., 1983) and Gigliotti (2002). For instance, the correlation between the constructs of affect and affirmation range from 0.95 to 0.98 (Norbeck et al., 1981; Norbeck et al., 1983) and between 0.88 and 0.96 for the total network support (Kang et al., 1998). Additionally, in a review of nurse designed social support instruments, the NSSQ was identified as a promising measure for social support (M. Stewart, 1989) and has been described as having the three key elements for an instrument: (a) sound theoretical basis, (b) reliability, and (c) validity (Secco & Moffat, 1994). The readability of the NSSQ is at a 3.2 reading grade level confirmed by the Flesch Reading Ease and Flesch-Kincaid Scales.

Statistical analyses that have been performed with the NSSQ include ANOVAs (Bertero, 2000; Kang et al., 1998; Koniak-Griffin & Lominska, 1993), MANOVA (Bertero), correlations (Falcon et al., 2009; Kirksey et al., 2002; Muller & Lemieux, 2000; Norbeck et al., 1996; Oh & Feldt, 2000; Sin et al., 2005; Wagle et al., 1997), one-

tailed Fisher's exact test (Norbeck et al.), multiple regression (Kirksey et al., 2002; Norbeck & Anderson, 1989; Sin et al., 2005), Mann-Whitney U (Koivula et al., 2002), and linear regression analyses (Falcon et al., 2009).

One limitation of the instrument is the lack of measurement of the adequacy of identified social support relationships to predict positive outcomes, although one study defined cut off scores for adequate social support for participants' mothers (28 or higher) and husbands (28 or higher), or a combination of the two (36 or higher) (Norbeck et al., 1996). Researchers determined these values through evaluating another research study by Norbeck and colleagues (1989). However, these cut off scores were based on the previous version of the NSSQ and scoring tool. The scoring tool was revised in 1995 and changed from a 1- to 5-point Likert scale to a 0- to 4-point Likert scale (Norbeck, 2001). Therefore, for purposes of this research, the PI examined the percentage by dividing the previously identified cut off score (28) by the maximum possible score (total function) (30) for each individual identified social support person (93.33%).

On the new scoring tool, the maximum total function score for one individual identified social support person was 24. The PI then multiplied the maximum total function score (24) by the identified percentage level (93.33%), creating a new cut off score (22.40) based on the revised scoring tool. Within this study, the level for adequate social support provided by one person was identified as 22. For the construct of total function, the score was divided by the number of individuals listed as support persons (total network score); scores 22 or higher were deemed adequate social support while scores less than 22 were deemed inadequate social support.

Everyday Stressors Index

The ESI is an instrument similar to the ADMQ, using a 20-item, 4-point Likert scale to measure chronic everyday stressors, which was modified from the original 22-item Maternal Everyday Stressors instrument. Responses for the items and appropriate scoring are as follows: (a) not at all bothered (0), (b) a little bothered (1), (c) somewhat bothered (2), and (d) bothered a great deal (3). Scoring may range between 0 and 60 with higher scores indicating elevated levels of everyday chronic stress.

The ESI has been used in low-income female adult populations and is designed to measure chronic problems in mothers with young children, but has not been tested with adolescents. Constructs within the ESI include: (a) financial concerns, (b) overload of role, (c) employment or job concerns, (d) parental worries, and (e) interpersonal conflict (Peden et al., 2004). Previous testing of the instrument has yielded strong Cronbach's alphas between 0.80 and 0.86 (Hall, 1990; Hall & Farel, 1988; Hall et al., 1991; Hall et al., 1996; Hall et al., 2008; Hall et al., 1985; Peden et al., 2004, 2005) and construct validity has been determined through factor analyses (Hall et al., 1991; Hall et al., 1985). Permission to use the ESI was obtained by Dr. Lynne Hall (Lynne A. Hall, personal communication via email, February 9, 2009).

Statistical analyses used with the ESI include multiple regression (Hall et al., 1991; Hall et al., 1996; Hall et al., 2008; Peden et al., 2004), path analyses (Hall et al., 1996; Hall et al., 2008; Peden et al.), and logistic regression (Hall, 1990; Hall & Farel, 1988; Hall et al., 1996; Hall et al., 1985). In addition, other statistical analyses reported in the literature include repeated measures ANCOVA (analysis of covariance) (Peden et

al., 2005), t-tests (Hall et al., 1991), and correlations (Hall, 1990; Hall & Farel; Hall et al., 1985). The readability of the ESI is at a 6.1 reading grade level confirmed by the Flesch Reading Ease and Flesch-Kincaid Scales.

Adolescent Demographic Questionnaire

The ADQ has been developed by the PI for the study and was tested for reliability and validity. Face validity was determined through evaluation of the questionnaire by three healthcare professionals. The instrument contains continuous, categorical, and ordinal data. The readability of the ADQ is at a 5.7 reading grade level confirmed by the Flesch Reading Ease and Flesch-Kincaid Scales. Coding for the ADQ is shown in Table 3.

Pilot Study

Because the ADQ had not been tested in previous research, the ADMQ had limited testing with adolescents in the continental US, the NSSQ had limited testing with adolescent mothers, and the ESI had not been tested with adolescent mothers, a pilot study was needed to confirm the feasibility and usefulness of these instruments within the population of adolescent mothers. Additionally, the pilot study provided a valuable evaluation of the data collection processes described above. In the initial planning process of this study, both pregnant and parenting adolescents were included in the sample. After review of the study by the NFP's Research and Publication Committee for the study, the sample ($n = 38$) was concentrated to adolescent mothers who were six months to two years post-partum. However, the pilot study was conducted prior to the change in the sample, and therefore reflects both pregnant and parenting adolescents.

Table 3

Coding for the ADQ

Variable	Entered data	Coding
Age	Today's Date – Date of Birth	—
Rent or own	—	Rent 0 Own 1
Current living situation	—	Live with Parents 0 Live with Other Family 1 Live with Friends 2 Live alone 3
Lives with boyfriend or girlfriend	—	No 0 Yes 1
Race/ethnicity	—	Asian/Pacific Islander 0 White/Non-Hispanic 1 Black 2 American Indian 3 Hispanic/Latino 4 Other/Mixed 5
Marital status	—	Never Married 1 Divorced/Separated 2 Married 3 Widowed 4
Current enrollment in school	—	No 0 Yes 1
Type of school	—	Public 0 Private 1
Educational level	—	Less than 7 th grade 6 7 th grade 7 8 th grade 8 9 th grade 9 10 th grade 10 11 th grade 11

Variable	Entered data	Coding	
		12 th grade	12
		Any College Courses	13
Current employment	—	No	0
		Yes	1
Hours worked per week	Enter	—	—
Age of baby	Enter in months	—	—
Nurse home visitor	Enter identified code on the recruitment packet (0-19)		
NFP site location	Enter identified code on the recruitment packet (0-4)		

The purpose of the pilot study was to provide an initial evaluation of the usefulness of instruments and data collection processes to better understand adolescent decision-making for adolescents who are pregnant or parenting (Lane & Kohlenberg, 2011). The instruments included the following: (a) ADMQ, (b) ESI, (c) NSSQ and the (d) ADQ. These instruments were selected for evaluation in this study based on salient concepts and measures in previous adolescent health research. Also, determining useful measures and procedures will inform future research on adolescent decision-making and the related factors. Based on the current adolescent health research, a pilot study was needed to evaluate the instruments with adolescents who are pregnant or parenting and to assess the appropriate data collection processes for this population.

Instruments

Three established instruments were selected to provide an initial evaluation of the concepts and to determine their usefulness in an adolescent sample. The ADMQ was used to measure how adolescents make general decisions, both positive and negative, including coping behaviors such as: (a) self-esteem, (b) vigilance, (c) complacency, (d) panic and (e) cop out. Permission to use the ADMQ was obtained through Dr. Leon Mann (Leon Mann, personal communication via email, 11/10/2008). The ESI was selected to assess everyday stress specific to pregnant and parenting women focusing on financial concerns, role overload, parenting worries, employment problems, and interpersonal conflict. Permission for use of the ESI was provided by Dr. Lynne Hall (Lynne A. Hall, personal communication via email, 2/19/09). The NSSQ was used to determine a socially supportive context for adolescents in their decision-making behaviors. Each respondent may identify individuals who provide social support providing data related to the quality, quantity, and type of social support as well as loss of social support for the respondent. Self-reported data on the NSSQ provides information about levels of emotional support and aid, functional support, and network support received by the participant. Permission to use the NSSQ was obtained through a statement of permission via the internet (Jane Norbeck, <http://nurseweb.ucsf.edu/www/ffnorb.htm>, 3/4/10).

The ADQ is a PI-designed tool used to measure demographic data and has not been previously used in any studies. Although face validity of the instrument was verified through the use of three healthcare professionals, the instrument required

validation in the intended population. Therefore, piloting of the ADQ with adolescents who are pregnant or parenting was needed to determine if the questions were appropriate, readable, and comprehensible. In addition to testing the instruments, the processes of recruitment and data collection were assessed.

Conceptual Model

Norbeck's social support model (1981) was used to guide the study. The model has been tested using the NSSQ (Norbeck, 1981) and social support was measured through the NSSQ for parsimony between the measurement and the conceptual model. Properties of the person were measured through the ADQ. Properties of the situation were measured empirically with the ESI. Outcomes in the study were identified as decision-making behaviors and will be measured through the ADMQ.

Methodology and Study Design

The pilot study was a descriptive cross-sectional design. Participants were asked to complete four instruments: 1) ADMQ, 2) ESI, 3) NSSQ, and 4) ADQ. Prior to data collection, the PI met with the nurses and supervisors from two health department agencies and described the distribution of the informational packets, purpose of the study, and inclusion/exclusion criteria for the study. Training for the nurses and supervisors required approximately 30 minutes. The informational packets were pre-assembled by the PI and included the purpose of the study, potential involvement of time (45 minutes to 1 ½ hours), informed consent information, inclusion criteria, and contact information for the PI. Specifically, the packets included a flyer as the cover page, recruitment letters for both adolescents and parent/legal guardians of the adolescents, and assent and consent

forms. The nurses distributed the packets to clients who met the criteria for the pilot study. Adolescents who wished to participate in the pilot study contacted the PI by telephone or email.

Approval for the pilot study was obtained from the University of North Carolina at Greensboro's Institutional Review Board (IRB) (see Appendix E). In an effort to understand the usability of the instruments, participants were encouraged to discuss questions that appear on the surveys with the PI. Instruments were administered in a random order to reduce response fatigue bias, and all participants received a \$20 Wal-Mart gift card in appreciation for their time and participation in the pilot study.

Need for Piloting of the Instruments

Adolescent Decision Making Questionnaire. The ADMQ has been tested with adolescents throughout many countries, but only two studies identified the use of the instrument in the US, both in the state of Hawaii (Commendador, 2007; 2011). Piloting of the instrument was needed to verify that the tool was appropriate for use in the continental US. The administration time of the ADMQ was not reported in the literature.

Norbeck's Social Support Questionnaire. The NSSQ has previously been used with adolescents (Kang et al., 1998; Sin et al., 2005) although it was not specifically used with parenting and pregnant adolescents enrolled in health promotion programs. Additionally, previous research with the NSSQ did not address the time commitment for administration of the instrument.

Everyday Stressors Index. The ESI is an instrument similar to the measurement of the ADMQ, using a 20-item, 4-point Likert scale to measure chronic everyday

stressors. Although the ESI has been used in previous research with low-income women with younger children, it has not been tested with adolescents. Additionally, the time for administration of the ESI was not reported in the literature.

Adolescent Demographic Questionnaire. The PI-designed demographic form included items such as: (a) the participant's age, (b) living status, (c) race/ethnicity, (d) marital status, (e) public or private education, (f) educational level (g) employment status, (h) hours worked per week and (i) parenting or pregnancy status. This instrument had not been tested in any populations and therefore, reliability confirmation was needed prior to use.

Population and Sampling Process

Two health departments in the Southern US were used for recruitment of participants through convenience sampling. Twelve participants, 31% of the larger study (approximately one-fourth of the proposed sample), were recruited from two health departments. All participants were recruited through health promotion programs designed for pregnant or parenting adolescents. In the pilot study, nurses from the agencies distributed informational packets to all clients who met the inclusion criteria of the study. Inclusion criteria for the pilot study included: (a) greater than or equal to 13 years of age and less than or equal to 18 years of age, (b) female, (c) first-time mother, (d) ability to read, write, and speak English, (e) between 12 weeks gestation up to the child's second birthday, and (f) not enrolled in the NFP. Males, adolescent females who are not parenting or pregnant, and adolescents with mental health illnesses were excluded from the pilot study. In order to ensure that inclusion and exclusion criteria were met, the

supervisors and nurses were trained to only distribute informational packets to adolescents who met the identified criteria. One adolescent who received the packet was removed from the study due to self-reported depression. The adolescent received the incentive in appreciation of her time. However, she refused the mental help assistance and resource information which was offered by the PI.

Data Analyses

All data analyses were performed with SPSS for Windows version 15.0 (SPSS, Chicago, IL). Data were entered into the statistical program on the PI's password-protected personal computer, cleaned, and de-identified. Missing data were assessed by double entry and double checks with survey forms and the SPSS data file. Responses were coded 0 if that tool item was missing.

Univariate and bivariate descriptive statistics were initially calculated using measures of central tendency. In addition, continuous variables were assessed for outliers and normality in univariate analysis using boxplots and scatterplots. The three instruments were evaluated for initial reliability. The subscales of the NSSQ were examined for correlation with each other to determine reliability of the instrument.

Results

Twelve pregnant or parenting adolescents were recruited for the study, although only 11 of the adolescents were included in the study. The demographic composition for the pilot study is described in Table 4. The scoring results for the ADMQ, ESI, and NSSQ are shown in Table 5. Additionally, Cronbach's alpha coefficients were tested for the ADMQ, NSSQ, and ESI and the associated subscales (shown in Table 6).

Table 4

Demographic Description of Sample from Pilot Study

Variable	Minimum value	Maximum value	<i>M</i> ± <i>SD</i> or <i>N</i> (%)
Age of participant in years	14.83	18.06	17.02 ± 1.01
Living status			
Lives with parents	—	—	10 (90.9)
Lives with other family	—	—	1 (9.1)
Relationship living status			
Lives with boyfriend	—	—	3 (27.3)
Does not live with boyfriend	—	—	8 (72.7)
Housing arrangements			
Rent	—	—	4 (36.4)
Own	—	—	1 (9.1)
Missing data	—	—	6 (54.5)
Emancipation status			
Emancipated	—	—	2 (18.2)
Not emancipated	—	—	9 (81.8)
Race/ethnicity			
Asian/Pacific Islander	—	—	0 (0.0)
White/non-Hispanic	—	—	3 (27.3)
Black	—	—	5 (45.5)
American Indian	—	—	0 (0.0)
Hispanic/Latino	—	—	3 (27.3)
Other/Mixed	—	—	0 (0.0)
Marital status			
Never married	—	—	10 (90.9)
Divorced/separated	—	—	—
Married	—	—	1 (9.1)
Widowed	—	—	—
School enrollment			
Currently enrolled	—	—	9 (81.8)
Not enrolled in school	—	—	2 (18.2)

Variable	Minimum value	Maximum value	$M \pm SD$ or N (%)
Type of school			
Public school	—	—	9 (81.8)
Private school	—	—	1 (9.1)
Missing data	—	—	1 (9.1)
Highest grade level completed			
Less than 7 th grade	—	—	0 (0.0)
7 th grade	—	—	0 (0.0)
8 th grade	—	—	2 (18.2)
9 th grade	—	—	2 (18.2)
10 th grade	—	—	3 (27.3)
11 th grade	—	—	4 (36.4)
12 th grade	—	—	0 (0.0)
Any college courses	—	—	0 (0.0)
Employment status			
Not employed	—	—	11 (100.0)
Currently employed	—	—	0 (0.0)
Hours worked per week	0	0	0 (100.0)
Number of children	1	2 ^a	1.00 \pm 0.45
Pregnant or parenting status			
Pregnant	—	—	1 (9.1)
Parenting	—	—	10 (90.9)

Note. $N = 11$.

^a One participant was a first-time mother with twins.

Table 5

Instrument and Subscale Scores from the Pilot Study

Variable or subscale	Minimum value	Maximum value	$M \pm SD$ or N (%)
ADMQ self-esteem subscale	8	17	11.27 ± 2.37
ADMQ vigilance subscale	4	16	9.27 ± 3.72
ADMQ maladaptive subscale	5	22	14.64 ± 4.95
ADMQ complacency subscale	0	8	3.64 ± 2.54
ADMQ panic subscale	4	10	6.91 ± 2.07
ADMQ cop out subscale	1	6	4.09 ± 1.81
ADMQ avoidance subscale	0	3	1.55 ± 0.93
ADMQ put it off subscale	1	2	1.36 ± 0.50
ADMQ pass it on subscale	0	3	1.18 ± 1.33
NSSQ number of persons in network	4	14	7.82 ± 3.06
ESI total score	23	57	34.82 ± 9.59
NSSQ emotional support subscale	15	220	92.27 ± 56.42
NSSQ aid subscale	8	78	41.18 ± 23.17
NSSQ total function subscale	23	298	132.45 ± 78.22
NSSQ total network subscale	42	138	75.18 ± 30.98
NSSQ total loss subscale	0	17	3.36 ± 5.28
NSSQ nurse home visitor social support	0	0	—

Note. $N = 11$.

Table 6

Reliability Measurements for Tested Instruments and Subscales from the Pilot Study

Instrument	Subscale	Cronbach's alpha coefficient
ADMQ	Overall Instrument	0.24
ADMQ	Self-Esteem	0.32
ADMQ	Vigilance	0.80
ADMQ	Maladaptive Behaviors	0.63
ADMQ	Complacency	0.66
ADMQ	Cop Out	0.05
ADMQ	Panic	0.15
ESI	Overall Instrument	0.82
NSSQ	Overall Instrument	0.95
NSSQ	Emotional Support	0.99
NSSQ	Aid	0.96
NSSQ	Total Function	0.98
NSSQ	Total Network	0.87
NSSQ	Total Loss	0.67

Cronbach's alpha coefficients for the ADMQ subscales of vigilance, maladaptive behaviors and complacency were 0.63 or greater. The ADMQ is not designed to have an overall total score. For the overall scores for the ESI and NSSQ, the Cronbach's alpha coefficient was 0.82 and 0.95, respectively. Additionally, subscales of the NSSQ were found to have high alpha coefficients. Correlations for the subscales of the NSSQ were also evaluated (shown in Table 7).

Time commitments. Each participant in the study was given a broad time-frame (45 minutes to 1 ½ hours) for completion of the instruments. In order to better identify the amount of time needed for completion of the instruments, each participant's time of completion of the surveys was measured during the interview by the PI. The minimum

amount of time needed to complete all four instruments was 12 minutes. The maximum amount of time needed to complete all four instruments was 45 minutes. For the 11 participants, the mean time of completion was 30.36 minutes with a standard deviation of 10.65 minutes. This information is critical for future research. Most people are more willing to participate in research if the time commitment is minimal. Knowing that the completion of four instruments takes approximately one half hour may increase future participation of adolescents in similar research studies.

Table 7

Correlations of the Subscales of the NSSQ from the Pilot Study

	Emotional support	Aid	Total network	Total loss
Emotional support	—	0.917 *	0.951 *	0.156
Aid	—	—	0.835 *	0.406
Total network	—	—	—	0.173
Total loss	—	—	—	—

* $p < .01$.

Method of contact. Additionally, adolescents were asked to choose to complete the instruments at their home or at the local health department. Of the 11 adolescents included in the study, 10 (90.9%) adolescents chose to complete the instruments in their home. This high percentage may indicate that adolescents have difficulty in obtaining transportation or that the constraints of childcare may impact their ability to travel to other locations for research purposes.

Dependability of adolescents. Of the 11 participants included in the study, two of the participants did not attend the initial scheduled meeting. As documented by other researchers that work with adolescents, there were difficulties with scheduling and keeping appointments. Researchers working with the adolescent population must consider that there may be tremendous time commitments and travel expenses on the part of the researcher in order to obtain the needed data and meet the varying schedules of adolescents.

Discussion. One significant result of the pilot study indicated that pregnant and parenting adolescents did not view nurses as social support figures in their lives. Prior to administering the NSSQ, the PI read the instructions to the adolescents explaining that they could identify sources outside of family and friends such as teachers, nurses, church members, or neighbors. None of the adolescents identified nurses as social support although all 11 of the adolescents had involvement from a nurse through their local health department programs. Despite the adolescents' lack of perception that nurses provided social support, the adolescents were extremely receptive to participation in a nurse research study. All of the 11 participants indicated on the ADQ that they would like to be contacted if future research was conducted.

One of the main aims of the pilot study was to determine the effectiveness of using the ADMQ, ESI, NSSQ, and ADQ when conducting research in a population of parenting and pregnant adolescents. Each adolescent was asked by the PI to identify any questions or words on the instruments that were unclear or unfamiliar. No questions or words were identified as unclear on the ADMQ, ESI, or ADQ. Only one word from the

NSSQ was identified as unclear by three participants (27.3%). The three participants were unfamiliar with the term *confide*, indicating that future research may need to interchange this term with a term of a lesser reading level or to include a definition along with instrument administration in a population of adolescents. Therefore, an addition of the definition of confide was added to the NSSQ prior to administration of the instrument in the larger study. The term was identified with an asterisk, and the definition was placed at the bottom of the page three of the tool which contained question number three. The definition that was added to the NSSQ stated *confide means to share secrets or discuss private matters or problems with another person* (“Confide,” 2012). In the larger study, the PI explained the instructions for the NSSQ and identified the location of the definition for the participants prior to completion of the tool.

Overall, each of the instruments tested were appropriate for the population of pregnant and parenting adolescents. Additionally, the processes for completing data collection were appropriate and well-received by the participants as indicated by the unanimous agreement for participation in future research.

Implications for nursing. All of the instruments evaluated in this study were identified as useful tools in research relating to decision-making, everyday stressors, and social support in parenting and pregnant adolescents. With the exception of the term *confide* on the NSSQ, the instruments measured were determined appropriate for this sample of female adolescents. The ADMQ, ESI, NSSQ, and ADQ were found to be appropriate measures of the constructs and demographic variables for this population for future nursing research. Through the use of these instruments, researchers may be able to

further define the constructs of decision-making, everyday stressors, and social support for adolescents.

Limitations. Limitations of the pilot study include the use of convenience sampling and a small sample size that may not be representative of the larger population. Additionally, persons seeking healthcare in the health department setting may not be representative of participants who utilize private healthcare providers. Persons participating in health promotion programs for pregnancy and parenting may not be representative of all adolescents. Furthermore, adolescents who are pregnant or parenting may not represent all adolescents. To control for these limitations, a larger sample size is needed.

Data Collection

After coordination with the national and local levels of the NFP, Institutional Review Board (IRB) approval was received, and participant recruitment began. Data collection began in March 2011 and was concluded in November 2011. Analyses took place from December 2011 to March 2012. Completion of the appropriate consent and/or assent forms and active participation in the surveys constituted agreement to participate in the study. Recruitment began by the distribution of packets from the NFP nurse home visitors to the NFP participants that were selected through convenience sampling. After the PI was contacted by an adolescent, the PI explained the forms and discussed which forms (consent and assent) were needed prior to participation.

In the initial contact call, the PI allowed the participant to choose whether the meeting took place at the local NFP office or in the participant's home. The meetings

were conducted at a time and place that were most convenient for the participants, where the participants felt comfortable, and confidentiality could be maintained. However, participants were encouraged to have the meeting at the NFP agency or local health department so that adequate space was available for the completion of the surveys. In the event the participant chose to meet in their own home, the environmental safety was confirmed with the nurse home visitor prior to the meeting. If the adolescent was emancipated, proof of emancipation was shown to the PI at the initial visit prior to completion of surveys. In the initial call, the PI determined if the participant was emancipated and instructed the participant on providing documentation prior to participation in the study.

Furthermore, if adolescents were not emancipated and had not reached the age of 18, the PI instructed the adolescent to provide her parent or legal guardian with the parental recruitment letter and parental consent form. The adolescent was asked to bring the parental consent form at the scheduled time for completion of the surveys. If the participant did not bring the parental consent form to the scheduled interview and the parents or legal guardians were not present, the PI rescheduled at another time to complete the interview with the adolescent after providing additional instructions on the completion of the parental consent form.

In an effort to increase participation, participants received two reminder telephone calls prior to the scheduled appointment, unless the participant requested to complete the surveys within 24 to 48 hours of the initial phone call. The first reminder call was made by the PI one week prior to the appointment, and the second call was made the morning

of the appointment. In each telephone call, the PI shared information with the participant such as the arrival time, vehicle driven, and the clothes worn to increase the participant's security and safety related to the study. If the scheduled meeting took place at the local NFP agency or health department, directions and room information were provided on all telephone calls.

In the survey session, the PI spent time establishing trust and rapport with the adolescent mothers. Adolescents were asked to read the consent/assent form, and the PI reviewed the consent/assent form with each adolescent. Informed consent was given by the parent(s) or legal guardian(s) and the informed assent form by the adolescent was signed prior to participation. If the participant was 18 years of age or provide documentation of emancipation status, the participant signed a consent form for participation in the study. Participants were ensured that there were no right or wrong answers. Data collection sheets were coded to protect confidentiality. Participants in the study were asked to complete the ADMQ, NSSQ, ADQ, and the ESI. During the survey session, the ADQ was administered first in order to increase participants' self-confidence in the ability to answer the survey questions. The remaining three instruments were administered in a random order in an effort to reduce bias due to response fatigue.

In an effort to increase confidentiality, there were two folders at the time of survey completion. One folder contained the consent and assent forms, and the other folder contained the completed instruments. After completion of the forms, the PI thanked each participant for their time and input into the study. At the end of the data collection, the PI answered any questions related to the study. Participants were

informed on the consent form that they could choose to answer or not answer any particular question and had no obligation to continue answering the questions once they began. The PI reiterated that if any question caused discomfort they would stop the interview; no discomfort or distress was noted in any participants in the pilot study or larger study. If participants were unable to complete all surveys and instruments during the initial scheduled time, a follow up appointment would have been made with the adolescent within the next two weeks; however, in this sample all participants completed the surveys in one session.

Research Design for Study ($n = 38$)

Based on the pilot study results, the current state of the science, and data, it was clear that further research was needed to measure the variance of the identified variables; and more information was needed about variables that have not previously been examined. Additionally, the pilot study supported the use of the ADMQ, NSSQ, ESI, and ADQ for the population of pregnant or parenting adolescents.

Based on the research questions, quantitative methodologies were used to analyze the results for the study. This non-experimental research study utilized a quantitative approach to explore decision-making behaviors for adolescents enrolled in the NFP. This quantitative methods approach included the use of a cross-sectional descriptive and inferential design. A cross sectional approach was utilized taking into account that the participants were observed at one point in time. Additionally, the cross-sectional design allowed for exploration of the phenomenon and the relationships among variables included in the study (N. Burns & Grove, 2008). Moreover, the study did not focus on

changes over time, but instead focused on an exploration of relationships among variables, and therefore the cross-sectional associational approach was the most appropriate method.

Setting

The data collection took place in North Carolina (NC). Participants were enrolled in the NFP, a health promotion program for low-income, first-time mothers. While the NFP enrolls low income first-time mothers of all ages, this study focused on adolescents enrolled in the NFP. Currently, there are eight NFPs in NC; each state's local NFPs enroll 100 participants (Nurse-Family Partnership, 2012). The study was conducted in five of the eight NFP programs in NC. The time frame for the study ranged from March 2011 to June 2012.

Sample and Sampling Plan

A convenience sample of 38 adolescent mothers between the ages of 13 and 18 years of age were used in the study. Assuming a two-sided significance level of 0.05, with a sample size of $n = 38$ there was at least 80% power to detect an effect size of 0.664, given the within-NFP site correlation of the outcome is 0.01 or less from power calculations under a multilevel modeling analysis. This effect was close to a “moderate” effect size (0.500) as discussed in Donner and Klar (1996, 2000) and Cohen (1992).

Although, the PI did not know *a priori* what to expect in terms of the multilevel structure for the within-site correlation, as an expanded literature search did not yield estimates, the magnitude of this within-NFP site correlation could be reasonably expected to be similar to community-level trials where cluster or group randomization is

performed. In this situation, these intraclass correlations (ICCs) are typically estimated to be of magnitude 0.005 to 0.01, and rarely larger than 0.05. However, if the ICC is larger, for example within-site correlation = 0.10 then there is 80% power to detect an effect size of 0.828, and if the ICC = 0.75 (a large within-site correlation), then there was sufficient power to detect an effect size of 1.568.

The PI examined power under multilevel modeling to detect differences where adolescent mothers were conceptualized as being nested within NFP nurse home visitors. In this study, since there were four nurse home visitors per agency and approximately eight NFP participants in each agency, the PI assumed approximately two participants per visitor and examined power. Under that assumption and again assuming a two-sided significance level of 0.05, with a sample size of 38 there was at least 80% power to detect an effect size of 0.685, if the within-NFP visitor correlation for the outcome (ICC) was 0.10 or less (see Figure 5). Figure 5 also gives the detectable difference for any estimated size of ICC (purple curve). Thus, there was sufficient power to detect close to medium effect sizes with this sample size under these assumptions. If the within-NFP visitor correlation is larger, for example the ICC = 0.50 or 0.75, then the detectable differences are 0.835 and 0.916, respectively.

A sampling frame of adolescent mothers was obtained from the NFP agencies. Initially, five lists, one from each of the NC NFP agencies, were obtained with an approximate number of unidentified qualified potential participants to ensure confidentiality. Each local agency retained a master list that coordinated with the unidentified list used by the PI. Each list included NFP participants from a specific

agency that met the study's inclusion criteria. In the original research design, the PI proposed systematic random sampling. Upon review from the National NFP's Research and Publication Committee, NFP clients who were parenting for less than six months and pregnant clients were removed from the potential sample. Additionally, the committee removed South Carolina participants from the potential sample due to other research studies being conducted concurrently in each of the South Carolina NFP sites. Due to the small number of potential qualified study participants (47 in NC), the proposed plan for randomized systematic sampling was changed to convenience sampling in an effort to obtain an adequate sample size for the study.

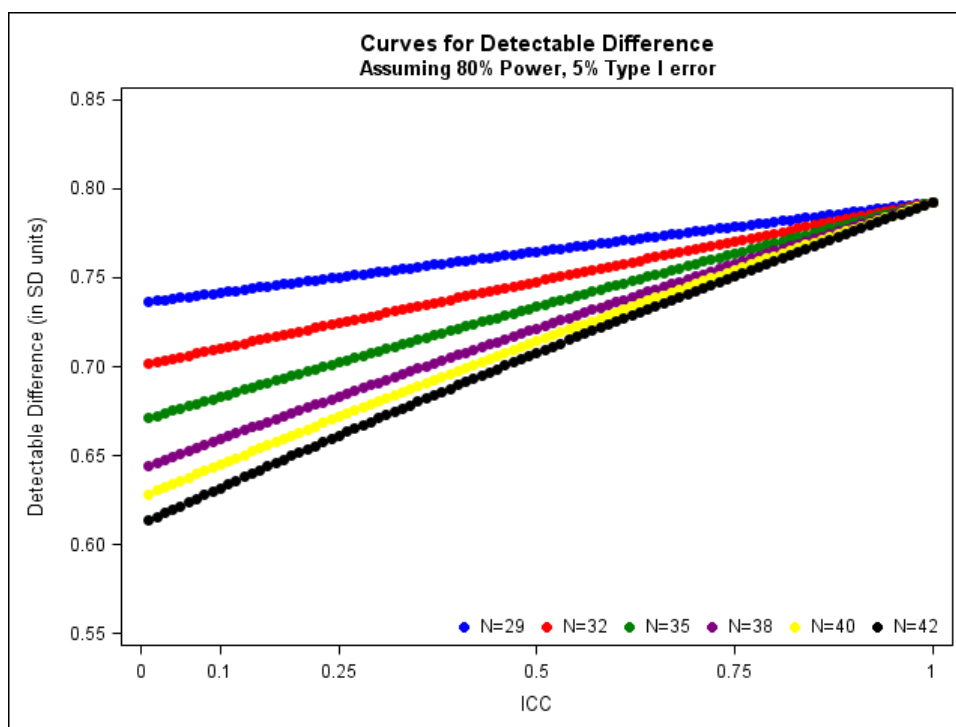


Figure 5. Detectable differences for various ICCs and sample size from multilevel modeling.

After each agency reported the approximate number of potential qualified participants per nurse home visitor, the PI distributed the equivalent number of packets to each nurse home visitor at the training session. Forty seven packets describing the purpose of the study, recruitment letters for parents and adolescents, potential involvement of time, contact information, inclusion criteria, consent forms, and assent forms were delivered by the NFP home visitors to the individual adolescents enrolled in the NFP that met the study's inclusion criteria. Extra packets were given to the NFP supervisors at each local site for distribution to NFP clients who qualified at a later date. This qualification could occur if all criteria were met, but the client was less than six months post-partum. Upon the client's child's six month birthday, the nurse home visitor would approach the client about participation in the study.

During the data collection phase, the NFP supervisors retained access to the identity of the qualified participants and ensured that distribution of the packets occurred in a timely manner. Prior to beginning the study, a letter of support was obtained from the national NFP's Research and Publication Committee and written or verbal statements were obtained from the local NFP agencies. Criteria for inclusion (Table 8) were: (a) current enrollment in the NFP, (b) a first-time mother, (c) between six months post-partum and within two years after delivery, (d) a female, (e) English speaking and able to understand and comprehend English and (f) an age ranging between 13 and 18. Exclusion criteria are described in Table 9.

Table 8

Inclusion Criteria

Inclusion Criteria	Rationale
NFP Participant	Participants of the NFP who are adolescent mothers were included in the study. This vulnerable population has demonstrated risky decision-making behaviors related to sexual activity, and therefore were able to provide insight into factors that influence decision-making and the decision-making behaviors, both for positive and negative behaviors.
Greater than or equal to 13 years of age and less than or equal to 18 years of age.	Adolescent pregnancy rates remain high even after a decline in the numbers (Martin et al., 2007). While the developmental stages may vary, all of these adolescents have experienced a sexual encounter and therefore would have comparable experiences. Future research will examine differences in the age specifically, while statistical models examined age as a variable.
Female	While male adolescent decision-making processes are important, adolescent females who are pregnant experience long term effects of sexual activity decision-making processes, and also experience health disparities and negative health outcomes for both themselves and their children.
First time mother	Multiparity may influence decision-making process. Enrollment in NFP includes this criterion.
English speaking and able to understand and comprehend English	The PI is not fluent in other languages. The sample size is insufficient to examine differences due to language.
Between 6 months post-partum and 2 years post-partum	This criterion was requested for the research study by the National NFP's Research and Publication Committee.

Table 9

Exclusion Criteria

Exclusion criteria	Rationale
Males	While adolescent male decision-making behaviors need to be examined, this area will be studied in further research.
Adolescents who are not parenting	Negative or poor health outcomes for pregnant adolescents have been evidenced. Prevention of adolescent pregnancy and negative health outcomes is needed. Understanding factors influencing the decision-making process provided much needed insight into these health disparities.
Adolescents who are not oriented to time, place, and person, and who have known cognitive limitations or clinical mental illness diagnoses or treatment in the past six months for schizophrenia, depression, and suicide	Adolescents who are not oriented to time, place, and person or have known cognitive limitations or mental health illnesses may not have the cognitive ability to answer the surveys accurately and appropriately.
Females less than 13 years of age; and greater than 18 years of age	Females less than 13 years of age may be at different developmental levels as compared to other adolescents. Females greater than 18 years of age are considered adults, and therefore may have different decision-making behaviors than adolescents.

Training was provided to each nurse in the NFP sites utilized for the research study regarding distribution of the letters. Training sessions for the nurse home visitors and NFP supervisors took place at a time and location that were convenient to the nurse home visitors and part of their regular work schedule. Training took approximately 30

minutes with light refreshments served. The packets were given to the NFP nurse home visitors at each local agency during the training session.

The number of packets that each nurse home visitor received was based on the number of qualified study participants to whom each nurse home visitor provided care. Each nurse home visitor in the NFP provides services for up to 25 NFP participants, and therefore could potentially have received between 0 and 25 packets for delivery. There are between four and eight nurse home visitors at each NFP agency, with each agency having between 100 and 200 NFP participants per site (Nurse-Family Partnership, 2011b).

The adolescent (Appendix F) and parent recruitment letters (Appendix G) that were included in the packet delivered by the nurse home visitor were written at a fifth grade reading level confirmed by the Flesch Reading Ease and Flesch-Kincaid Scales. A color flyer was included as the first page of the packet (Appendix H). In addition to obtaining informed assent of participation in the research from the adolescent, informed consent from the mother or legal guardian of the adolescent was also obtained, unless the adolescent was legally emancipated (as demonstrated through appropriate documentation). There were no participants that the PI felt were not developmentally appropriate or psychologically able to complete the study, although the PI would have completed a small portion of the survey process, ended the survey process, and given the participant the incentive had this occurred. Additionally, the PI offered to read the surveys aloud eliminating problems with literacy issues for adolescents without

embarrassment or disclosure of information about literacy. Two participants (5%) chose to have the surveys read aloud during the data collection.

Protection of Human Subjects

Written informed assent and/or consent of all participants were obtained and were verbally confirmed prior to implementation of the research. Consent forms for emancipated minors and adolescents 18 years of age were written at the fifth grade level (5.8) and were measured using the Flesch Reading Ease and Flesch-Kincaid Scales (see Appendix I). Parental consent forms were written at a fifth grade level (5.9) as confirmed by the Flesch Reading Ease and Flesch-Kincaid Scales (see Appendix J). Assent forms for parenting adolescents were written at the fifth grade level (5.2) (see Appendix K). The participants were informed that: (a) participation in the study was voluntary, (b) a time commitment of approximately 30 minutes was needed to answer questions and complete forms based on the results of the pilot study, (c) enrollment in the NFP or care provided by the nurse home visitor would not be affected by the decision related to participation in the research, and (d) withdrawal from the study could occur at any time without penalty.

Each participant received an incentive upon completion of the surveys. The incentive was a \$20 gift card to Wal-Mart. Additionally, the PI offered the option of one educational class for all NFP participants at each local NFP agency related to a topic identified by the NFP supervisor, nurse home visitors, and/or NFP participants, although none of the agencies accepted the offer of the educational class. If the class had been

offered, all NFP participants or other related programs within the same organization would have been encouraged to attend regardless of participation in the study.

Risks associated with participation in the study included but were not limited to potential anxiety or distress associated with the survey and interview questions. If anxiety and/or distress would have occurred, the PI would have stopped the research at that point, offered breaks, comforted the participant, and provided the telephone number of the nurse home visitor for follow up. No anxiety or distress was exhibited by any of the study participants. Support and active listening would have been offered as needed. If the participants had experienced any negative health symptoms, such as nausea, vomiting, or fatigue, the PI would have offered to reschedule the interview. If the participant felt that she could not complete the interview at that time, another time would have been scheduled. If after breaks, the participant continued to be upset, the mother or other adult contact provided by the subject would have been contacted and asked to come be with the subject.

Participants were informed that the research might provide insight in the experiences of adolescent mothers and might help to identify ways to assist other adolescents in the future. Additionally, participants were informed that potential benefits might include knowledge about decision-making, everyday stressors, and social support. All information remained confidential, and in the likelihood of a published study the individual's name, identifying data or the site of collection will not be identified. Pseudonyms may be used in the reporting of the data. Anonymity cannot be guaranteed. Copies of the consent forms, surveys, and instruments are kept in a locked location at the

office of the PI. The master list of names with the associated study identification numbers is located in a locked location at the office of PI separate from the data. Data analyses were performed on the PI's personal and personal office computer and the personal computer of the statistician associated with the research study; all are password protected.

Protection of human rights followed the IRB guidelines set forth by The University of North Carolina at Greensboro. Participants were free to contact the PI or the IRB at any point during the study. Contact information was provided, and participants were encouraged to call if they had any questions regarding the study. Approval to conduct the study was obtained from both The University of North Carolina at Greensboro's IRB (Appendix L) and the NFP's Research and Publication and Communication Committee (Appendix M) prior to implementation of the study. In addition, approval for the research was obtained from the local NFP agencies via a written or verbal statement of support. Participants were informed that they may request a summary of the findings from the research; no participants requested a summary of the results.

Data Process and Analyses

All analyses were performed using SPSS for Windows version 19.0 (SPSS, Chicago, Illinois) and SAS v9.2 (SAS Institute, Cary, North Carolina). Data were entered into the statistical program and checked for accuracy, where missing or questionable data were assessed and compared to original data and the participant's responses. Univariate and bivariate descriptive statistics were initially calculated using

measures of central tendency such as means and standard deviations or frequencies and percentages. In addition, continuous variables were assessed for outliers and normality in univariate analysis using boxplots and normal Q-Q plotting. Analyses were performed with and without outliers in sensitivity analyses to assess how sensitive conclusions were to influence potential outliers.

Using Norbeck's model of social support, hierarchical regression modeling was originally proposed in the statistical analyses. Also, the a priori statistical power was based on this modeling for the research study. According to Norusis (2007), this type of model is often termed a multilevel linear model, random coefficient regression model, or covariance components model and is appropriate with the use of nested data.

"Hierarchical models are used when cases are clustered within larger units and information is recorded for both the case and the larger unit" (Norusis, 2007, pg. 211-212). In the proposed analyses, there were up to three identified levels of hierarchy: (a) adolescent factors (level 1), (b) the nurse home visitor (level 2), and (c) the NFP site (level 3). It was reasonable to assume that co-variate data could cluster around the individual, the nurse, or the geographic location and therefore the use of hierarchical regression model was potentially appropriate, although it was not known beforehand to what extent clustering would occur at each level.

After examining the collected data and reviewing the preliminary statistics, none of the hierarchical models indicated non-trivial clustering during the analyses. Analyses indicated that not only that a hierarchical regression approach was not needed, but in several cases would not even converge to a solution because of a complete absence of

clustering in the observed sample data. In fact, the estimated ICC values were essentially zero indicating that there was no clustering of the data surrounding the pre-identified groups and in most cases resulted in non-convergence of the hierarchical modeling. Therefore, alternative statistical analyses were conducted under non-hierarchical approaches and are subsequently presented. Due to the low ICC levels, correlational analyses and MANCOVAs (multivariate analysis of covariance) and followed with individual ANCOVAs were used to provide the most appropriate results under non-hierarchical approaches for addressing the research study questions.

Assumptions of analyses were rigorously checked for accuracy. Assumptions for ANOVA were checked with residual analyses with included evaluation of: (a) linearity, (b) homoscedasticity, and (c) normality (Polit, 1996; Tabachnick & Fidell, 2007), since independence of observations was assumed due to the study design (cross-sectional with individual participants). Multicollinearity was also assessed with inspection of the variance inflation factors (VIFs) of the independent variables. All variables had VIFs less than seven indicating no evidence of possible multicollinearity (Polit, 1996). Additionally, descriptive statistics and measures of central tendency were used to describe the demographic variables, everyday stressors, and social support measurements. Skewness or kurtosis was not noted within the data, and therefore transformations were not needed (Tabachnick & Fidell, 2007). All continuous variables included in the study were assessed for normal distribution and outliers and were correlated with other variables.

Specifically, the statistical analyses for each corresponding research question are as follows:

Specific aim 1. Describe the decision-making behaviors of parenting adolescent females enrolled in the Nurse-Family Partnership.

Research question 1. What are the decision-making behaviors for parenting adolescents enrolled in the Nurse-Family Partnership?

To characterize the decision-making behaviors for adolescents enrolled in the NFP who are pregnant or parenting, the scores for the ADMQ were calculated for each participant in the categories of self-esteem, vigilance, and maladaptive decision-making behaviors and descriptive statistics were estimated. More specifically, subscale scores for complacency, panic, and cop out were calculated. A category of positive decision-making behaviors was created by the use of the scores for vigilance. In turn, a category for negative decision-making behaviors was created using the remaining three categories: (a) complacency, (b) panic and (c) cop out. Under the subscale cop out, three additional subscales were scored: (a) defensive avoidance, (b) put it off and (c) pass it on. Self-esteem was measured independently based on prior use of the ADMQ in other research (Bosma et al., 1996; Brown & Mann, 1991; Commendador, 2007; 2011; Janis & Mann, 1977; Mann et al., 1989; Mann et al., 1988; Ormond et al., 1991; Radford et al., 1993; Tuinstra et al., 2000). Descriptive statistics, bivariate statistics, and measures of central tendency were used to describe decision-making behaviors in this population and were compared with the descriptive statistics from other variables included in the study.

Specific aim 2. Explore demographic variables, stressors, and social support that may influence decision-making behaviors in parenting female adolescents enrolled in the NFP.

Research question 2. What variables are predictive of positive decision-making behaviors for parenting adolescents enrolled in the Nurse-Family Partnership?

MANCOVA was performed on the variables in the study to determine the variables' predictive nature on decision-making behaviors, along with follow-up of individual of ANCOVA analyses for each dependent variable. Identified variables were entered into a multiple regression model simultaneously to evaluate the predictive nature of the variables while in the presence of each other. This simultaneous entry strategy was selected based on *a priori* theoretical and conceptual interest in these particular identified variables, and the desire to evaluate their associations while in the presence of each other. The variables that were included into the MANCOVA modeling consisted of: (a) nurse home visitor total function score, (b) participant's age, (c) education level, (d) employment status and (e) age of the baby. The first individual follow-up ANCOVA model included the dependent variable of vigilance. In order for the findings to be comparable with other research using the ADMQ, the model was additionally tested with each individual subscale using ANCOVA with self-esteem as the dependent variable.

Research question 3. What variables are predictive of negative decision-making behaviors for parenting adolescents enrolled in the Nurse-Family Partnership?

Similar analyses were used to determine what variables were predictive of negative decision-making behaviors. Here, the dependent variable in the modeling was

the combined category of (a) complacency, (b) panic and (c) cop out. Each subscale was also measured individually as dependent variables in MANCOVA modeling with individual ANCOVA follow-up modeling. Variables in these ANCOVA models were consistent with Research Question 2 and consisted of: (a) nurse home visitor total function score, (b) participant's age, (c) education level, (d) employment status and (e) age of the baby.

Exploratory research questions included:

Research question 4. What is the relationship between demographic variables and the outcome of self-reported social support of parenting adolescents enrolled in the Nurse-Family Partnership?

Similar to questions two and three, the analyses were performed using MANCOVA. The variables included in the modeling consisted of: (a) participant's age, (b) race/ethnicity, (c) living status, (d) living with a boyfriend/girlfriend/husband/significant other and (e) employment status. Eight individual follow-up ANOVA models were explored after the overall MANCOVA analysis with the following dependent variables: (a) emotional support, (b) aid, (c) total network, (d) total loss, (e) total function, (f) nurse home visitor emotional support, (g) nurse home visitor aid and (h) nurse home visitor total function score. In each of these models, the independent variables remained the same.

Research question 5. What is the relationship between everyday stressors and the outcome of self-reported social support of parenting adolescents enrolled in the Nurse-Family Partnership?

To explore the relationship between everyday stressors (the total score from the Likert scale) and the measures of social support, correlational analyses were performed using Pearson's r (Huck, 2008; Polit, 1996). Everyday stressors were correlated to each of the measures of social support: (a) emotional support, (b) aid, (c) total network, (d) total loss, (e) total function, (f) nurse home visitor emotional support, (g) nurse home visitor aid and (h) nurse home visitor total function score. Prior to computing Pearson's r for the variables, the PI performed scatterplots for the variables and tested for normality and outliers. Normality was supported; therefore, rank correlations were not presented in the subsequent statistical analyses. Additionally, no influential outliers were found, indicating that Spearman's rank correlation coefficient was not needed to analyze the data (Huck, 2008; Munro, 2001; Polit, 1996).

Summary

The aims of the study consisted of: (a) description of the decision-making behaviors of parenting adolescent females enrolled in the NFP, and (b) exploration of the demographic variables, stressors, and social support that may influence decision-making behaviors in parenting female adolescents enrolled in the NFP. Within the aims of the study, the PI has gained knowledge relating to five research questions. The PI utilized four instruments for the measurement of the variables in the study: (a) ADMQ, (b) NSSQ, (c) ADQ, and (d) ESI.

CHAPTER IV

RESULTS

Results of the data analyses and descriptions of the participants are reported in this chapter. The preliminary examination of data includes an explanation of how data were managed and instrument reliability statistics. Additionally, in this chapter the results for each specific aim and associated research questions are delineated. Analyses of exploratory research questions are also included.

Preliminary Examination of Data

Prior to addressing the results of the research questions, the preliminary examination of the data is discussed. Additionally, reliability of the following instruments and the subscales of those instruments are included: a) Adolescent Decision Making Questionnaire (ADMQ) (1989), (b) Norbeck's Social Support Questionnaire (NSSQ) (1995) and (c) the Everyday Stressors Index (ESI) (1983).

Management of Data

All thirty-eight participants in the study completed the four instruments at the time of the initial interview with the principal investigator (PI). Two folders were provided at the initial interview. One folder contained the signed consent and assent forms and the other folder contained the completed instruments. Data among instruments were identified by numerical coding on the instruments. All instruments were coded prior to beginning any data collection. No other identifying information was included on

the instruments to maintain confidentiality. Anonymity could not be ensured due to the Nurse-Family Partnership's (NFP) supervisors' and nurse home visitors' active role in the recruitment process.

Thirty-nine NFP adolescent clients were recruited and agreed to complete the study. Other NFP adolescent clients were approached to participate in the study by the NFP nurse home visitor, but were not willing to participate due to parental or adolescent concerns. One participant agreed to complete the research study, but was unable to be located by the PI or the nurse home visitor physically or via telephone following the initial phone call during multiple attempts, creating a sample size of 38 participants. Of those 38 participants, all met the inclusion criteria and completed all four instruments. The required proposed sample size of 38 was therefore met based on the assumption of a two-sided significance level of 0.05, 80% power to detect an effect size of 0.685 and an intraclass correlation (ICC) of 0.10 or less. Data were coded, entered, and analyzed using SPSS for Windows version 19.0 (SPSS, Chicago, Illinois) and SAS v9.2 (SAS Institute, Cary, North Carolina).

Participant data were entered twice into the SPSS computer software. Entries between the two SPSS computer files were compared to ensure accuracy. Responses were compared against the raw data collection forms for additional precision. Frequencies and descriptive statistics were calculated on all variables to assess for missing data and outliers. All participants were included in the study regardless of missing data. For inclusion in the study, all participants had to complete a minimum of 75% of the survey questions; this criterion was met by all participants.

Omitted responses on the ADMQ were coded as missing. Out of the 1140 potential responses on the ADMQ, only 13 items were omitted and therefore coded as missing values. Responses on the NSSQ were also coded as missing with the exception of 9a and 9b, which were dependent upon the answer for question 9. If the adolescent identified a response of no (0) on question 9, then the instrument instructed the adolescent to stop the completion of the instrument at that time, leaving 9a and 9b blank. However, there were no missing data for the participants' responses on the NSSQ after scoring. There was one missing value for the responses on the ESI; this response was coded as missing within the data set.

Furthermore on the NSSQ, participants were asked to identify up to 24 individuals that provided some type of social support. The participants also identified the relationship to the individual, such as mother, father, teacher, or nurse. Of the 38 participants in the study, three of the participants identified two individuals from the NFP that provided support rather than just one nurse home visitor. Each adolescent's reported scores for the second identified nurse home visitors were very similar to values for the subscales of the first identified nurse home visitor's NSSQ's nurse home visitor emotional support, nurse home visitor aid, and nurse home visitor total function scores. For the purposes of the data analyses relating to these three participants, the scores for nurse home visitor emotional support, nurse home visitor aid and nurse home visitor total function score were averaged using simple arithmetic measures.

The Adolescent Demographic Questionnaire (ADQ) was used to collect the demographic data related to the participants. Nominal data were coded into categories

and included the variables: (a) living status, (b) living with boyfriend or significant other, (c) rent or own, (d) race/ethnicity, (e) marital status, (f) school enrollment, (g) type of education, (h) level of education completed, (i) employment status and (j) first pregnancy.

Continuous data were entered as a numerical value and included the variables: (a) date of birth, (b) hours worked per week, (c) number of children and (d) age of baby. All missing responses on the ADQ were coded as missing. Variables on the ADQ that had no missing data included: (a) date of birth, (b) living with husband or significant other, (c) race/ethnicity, (d) school enrollment, (e) completed grade levels, (f) employment status, (g) number of children and (h) age of baby. First pregnancy and hours worked per week only had one missing value each. The variable related to living status (living with others outside of the husband or significant other) had five missing values while marital status had two missing values. However, the questions related to living arrangements and type of education had a large number of missing data, with 26 and 10 missing entries respectively.

Data were assessed for normality. In addition, skewness and kurtosis were evaluated and all items were found to have normal distributions. Univariate descriptive statistics, graphs such as histograms, and boxplots were used for assessing presence of outliers. Extreme outliers were not identified across measures. Histograms and Q-Q plots were used to assess normality for the dependent variables. However, a 1-sample Kolmogorov-Smirnov test was not used to assess normality because the test is sensitive to sample size and with a limited sample size of 38, the test was not an appropriate

assessment. After assessment of normal distributions, ANCOVA (analysis of covariance) assumptions, and residual analyses, it was determined that no data transformations were needed. Scatterplots were used to explore bivariate relationships.

Reliability of Instruments

After the initial analyses of the data, Cronbach's alpha coefficients were estimated for the ADMQ, NSSQ, and ESI and the associated subscales (shown in Table 10).

Cronbach's alphas coefficients for the ADMQ subscales of vigilance, maladaptive behaviors, complacency, and cop out were 0.60 or greater. For the overall scores for the ESI and NSSQ, the Cronbach's alpha coefficient was 0.66 and 0.95, respectively.

However, for the items of NSSQ emotional support and NSSQ total function, the values are greater than the recommended levels of 0.95, with values of 0.99 each. Cronbach's alpha coefficients with values greater than 0.95 may be interpreted as too high due to the potential indication of redundant items on the instrument. Yet, the NSSQ has been used in multiple research studies and the psychometric properties have been established; therefore, use of the instrument is recommended (Byers & Mullis, 1987; Gigliotti, 2002; Kang et al., 1998; Koivula et al., 2002; Norbeck, 1984, 1995; Norbeck & Anderson, 1989; Norbeck et al., 1981; Norbeck et al., 1983; The University of California: San Francisco, 2003).

Despite the large number of items that met the acceptable level for internal reliability (Cronbach's $\alpha \geq 0.6$), several items on the ADMQ were below the acceptable level. These items included: (a) the overall score for the ADMQ (0.45), (b) the self-esteem subscale of the ADMQ (0.58) and (c) the panic subscale of the ADMQ

(0.58). It can be hypothesized that the questionnaire itself may have created some variance for the ADMQ Cronbach's alpha coefficients due to the inclusion of reverse coded items.

Table 10

Reliability Measurements for Tested Instruments and Subscales

Instrument	Subscale	Cronbach's alpha coefficient
ADMQ	Overall instrument	0.45
ADMQ	Self-esteem	0.58
ADMQ	Vigilance	0.66
ADMQ	Maladaptive behaviors	0.82
ADMQ	Complacency	0.61
ADMQ	Cop out	0.60
ADMQ	Panic	0.58
ESI	Overall instrument	0.67
NSSQ	Overall instrument	0.95
NSSQ	Emotional support	0.99
NSSQ	Aid	0.94
NSSQ	Total function	0.99
NSSQ	Total network	0.87

The 30-item instrument used a 4-point Likert scale; the subscale of self-esteem on the tool included three items that were reverse coded and therefore could have potentially impacted the alpha coefficients for self-esteem and the overall score of the ADMQ, although the scoring was reversed prior to running Cronbach's alpha coefficients. Additionally, the font on the questionnaire is very small and several participants made verbal comments that the questionnaire itself was hard to follow between the item and the area for scoring due to the font size and the formatting of the lines. This comment was not made by any of the participants in the pilot study. Future use of the instrument might

be benefited by recreating the tool in clearer format with larger font or altering the items with reverse coding to be consistent with the other items on the questionnaire.

Although the ADMQ demonstrated low Cronbach's alpha coefficients for the overall score, self-esteem and panic, previous research has demonstrated Cronbach's alpha coefficients ranging from 0.52 to 0.827 (Bosma et al., 1996; Brown & Mann, 1991; Commendador, 2007; 2011; Friedman & Mann, 1993; Mann et al., 1988; National Network for Child Care, 1998; Ormond et al., 1991; Radford et al., 1993). In addition, there are other potential explanations for the low internal reliability on these items. The small sample size may have impacted the level of internal reliability on the instrument. Moreover, adolescents are mercurial by nature, and therefore the nature of the sample itself may have impacted the low internal reliability results.

Sample

Within the sample, all participants were female in order to meet inclusion criteria for the study. Age was collected at the time of the interview. The mean age of the parenting adolescents in the sample was 17.6 ($SD = 1.2$; range = 13 to 18). The median age of the sample was 17.9 years as compared to 19 for both North Carolina (NC) and the US, the median age of participants in the NFP (Nurse-Family Partnership, 2011f, 2012b). However, the NFP, on both state and national levels, include all first-time low-income mothers regardless of age and therefore is not an accurate comparison to the sample of adolescents within the study.

Within the five NFP recruitment sites, the majority of participants were recruited through sites number one and three (52.6%). Most of the participants reported living

with parents (65.8%). Of the sample, 21.1% reported living with a boyfriend or significant other. Approximately 29% of the sample reported renting versus owning within their arrangements. However, 68.4% of the sample did not report this information.

The adolescent participants within the study were mostly unmarried (81.6%) which is an accurate representation of the national NFP (85%) (Nurse-Family Partnership, 2011f) but slightly under-representative of NC (91%) (Nurse-Family Partnership, 2012b). The majority of the participants were enrolled in some type of school (68.4%). Of those participants enrolled in school, 73.7% were enrolled in public school. Similarly 32% of the sample identified that they had completed high school or some college courses, which is a close representation to the percentage of national NFP participants (44%) who have completed high school (Nurse-Family Partnership, 2011f). For state level data in 2010, only 7% of adolescents ages 16 to 19 living in NC were not enrolled in school and not high school graduates (The Annie E. Casey Foundation, 2012).

Approximately 26% of the sample was employed with a mean of 7.7 hours worked per week. Interestingly, 18.4% of the sample reported working 30 hours or more per week. Ten percent of the adolescents ages 16 to 19 living in NC in 2010 were not attending school and not working (The Annie E. Casey Foundation, 2012). One hundred percent of the sample reported that their child was their first baby, a requirement for inclusion in the NFP and the current study.

Within the participants, two participants (5.3%) of the sample reported that this baby was not their first pregnancy and an additional two participants (5.3%) reported that

they were currently pregnant with a second child. In comparison with NC NFP statistics, 73% of all NC NFP mothers had no subsequent pregnancies at the time of completion of the program (Nurse-Family Partnership, 2012b), where 94.7% of the sample reported that they were not currently pregnant. All participants within the study reported that they were not multiparous. The mean age of the adolescents' children was reported as approximately 11 months, with a minimum age of 6 months and maximum of 24 months. A summary of the demographic information is depicted in Table 11.

The majority of the sample was White/Non-Hispanic (34.2%) which is an accurate reflection of the racial and ethnic compositions for NFP participants in NC (30%) (Nurse-Family Partnership, 2012b) and the US (35%) (Nurse-Family Partnership, 2011f), while slightly under- representative of the overall statistics for all NC children up to age 18 (58.8%) (The Annie E. Casey Foundation, 2012). Nevertheless, there was a diverse racial and ethnic sampling with 27.3% Blacks, 26.3% Hispanic/Latino and 15.8% American Indian representation. However, in a comparison of the study sample to NFP state (NC) (1%) and national statistics (3%) related to percentages of American Indian composition, the study was over-representative of this population (15.8%) (Nurse-Family Partnership, 2011f, 2012b); the study was also over-representative of this population when compared to the racial and ethnic composition of all children in NC (1.3%) (The Annie E. Casey Foundation, 2012). Blacks were under-represented in the study (23.7%) as compared to NC NFP statistics (46%) (Nurse-Family Partnership, 2012b), while the sample does indicate an accurate representation of the national NFP statistics (25%) (Nurse-Family Partnership, 2011f) and overall statistics for all children in NC (The Annie

E. Casey Foundation, 2012). The categories of Asian/Pacific Islander and Other/Mixed were not represented in the sample. A comparison of the racial composition between the study and the racial compositions of the included NFP sites is demonstrated in Table 12 (Nurse-Family Partnership, 2010; K. Morris, personal communication, February 13, 2012; K. Edwards, personal communication, February 14, 2012; R. Fields, personal communication, February 13, 2012).

Table 11

Demographic Description of Sample

Variable	Minimum value	Maximum value	$M \pm SD$ or N (%)
Age of participant in years	13.35	18.98	17.63 ± 1.16
# of Participants at each NFP site and # of participants with each nurse home visitor			
Site 1			9 (23.7)
Nurse 0			2 (5.3)
Nurse 1			3 (7.9)
Nurse 2			2 (5.3)
Nurse 3			1 (2.6)
Nurse 18			1 (2.6)
Site 2			7 (18.4)
Nurse 4			3 (7.9)
Nurse 5			1 (2.6)
Nurse 6			3 (7.9)
Site 3			11 (28.9)
Nurse 9			4 (10.5)
Nurse 10			4 (10.5)
Nurse 11			2 (5.3)
Nurse 12			1 (2.6)
Site 4			8 (21.1)
Nurse 13			2 (5.3)

Variable	Minimum value	Maximum value	$M \pm SD$ or N (%)
Nurse 15			5 (13.2)
Nurse 16			1 (2.6)
Site 5			3 (7.9)
Nurse 17			3 (7.9)
Living status			
Lives with parents	—	—	25 (65.8)
Lives with other family	—	—	7 (18.4)
Lives with friends	—	—	1 (2.6)
Lives alone	—	—	0 (0.0)
Missing data	—	—	5 (13.2)
Relationship living status			
Does not live with boyfriend	—	—	30 (78.9)
Lives with boyfriend	—	—	8 (21.1)
Housing arrangements			
Rent	—	—	11 (28.9)
Own	—	—	1 (2.6)
Missing data	—	—	26 (68.4)
Emancipation status			
Not emancipated	—	—	34 (89.5)
Emancipated	—	—	4 (10.5)
Race/ethnicity			
Asian/Pacific Islander	—	—	0 (0.0)
White/Non-Hispanic	—	—	13 (34.2)
Black	—	—	9 (23.7)
American Indian	—	—	6 (15.8)
Hispanic/Latino	—	—	10 (26.3)
Other/mixed	—	—	0 (0.0)
Marital status			
Never married	—	—	31 (81.6)
Divorced/separated	—	—	0 (0.0)
Married	—	—	5 (13.2)
Widowed	—	—	0 (0.0)
Missing data			2 (5.3)
School enrollment			
Not enrolled in school	—	—	12 (31.6)

Variable	Minimum value	Maximum value	$M \pm SD$ or N (%)
Currently enrolled in school	—	—	26 (68.4)
Type of school			
Public School	—	—	28 (73.7)
Private school	—	—	0 (0.0)
Missing data	—	—	10 (26.3)
Highest grade level completed			
Less than 7 th grade	—	—	1 (2.6)
7th grade	—	—	0 (0.0)
8th grade	—	—	2 (5.3)
9th grade	—	—	4 (10.5)
10th grade	—	—	12 (31.6)
11th grade	—	—	7 (18.4)
12th grade	—	—	8 (21.1)
Any college courses	—	—	4 (10.5)
Employment status			
Not employed	—	—	28 (73.7)
Currently employed	—	—	10 (26.3)
Hours worked per week	0	40	7.70 ± 14.11
First pregnancy			
No	—	—	2 (5.3)
Yes	—	—	35 (92.1)
Missing data	—	—	1 (2.6)
First baby	—	—	38 (100)
Number of children	1	1	1.0 ± 0.00
Current pregnancy status			
Not pregnant	—	—	36 (94.7)
Pregnant	—	—	2 (5.3)
Age of child in months	6	24	11.42 ± 4.90

Note. $N = 38$.

Table 12

Comparison of Sample with External Data from NFP NC Data Collection Sites

	Study sample (%)	Site 1 (%)	Site 2 (%)	Site 3 (%)	Site 4 (%)	Site 5 (%)
Asian/Pacific Islander	0	0	^b	1.1	1.0	^b
White/Non-Hispanic	34.2	50	^b	8.7	82.3	14
Black	23.7	40.1	^b	26.6	10.8	66
American Indian	15.8	0.5	^b	34.2	0	^b
Hispanic/Latino	26.3	2.2	^b	15.2	^a	13
Other/mixed	0	0.5	^b	0	1.5	4
Unknown	0	6.7	^b	14.2	0.5	^b

^a Ethnicity was defined as Hispanic or Non-Hispanic for the total number of participants and not measured as race.

^b Not reported.

The ethnic breakdown per overall statistics for NC and the US are depicted in Table 13 (Nurse-Family Partnership, 2011f, 2012b). The racial and ethnic composition for the study as compared to NC and the US is shown in Table 14 (Nurse-Family Partnership, 2011f, 2012b). Additionally, the racial and ethnic breakdown for all children within the state of NC is included in Table 14 (The Annie E. Casey Foundation, 2012).

Descriptive Statistics of the Instruments

The ADMQ was completed by each of the 38 participants. The ADMQ is a 30-item, 4-point Likert scale containing six self-esteem items and 24 decision-making items. The nine subscales within the ADMQ are displayed in Table 15, with the number of

items per subscale. Additionally, the mean scores for each of the subscales within the ADMQ are depicted in Table 15.

Table 13

Ethnicity as Reported Per State and National NFP Data

	NC (%)	US (%)
Hispanic/Latino	13	28
Non-Hispanic/Latino	84	63
Missing data	3	10

Table 14

Comparison of Sample With External NC Statistics and NC State and National NFP Race/Ethnicity Data

	Study sample (%)	NC statistics (%)	NC NFP statistics (%)	US NFP statistics (%)
Asian/Pacific Islander	0	2.5	2	1
White/Non-Hispanic	34.2	58.8	30	35
Black	23.7	24.4	46	25
American Indian	15.8	1.3	1	3
Hispanic/Latino	26.3	13	^a	^a
Other/mixed	0	0	5	7
Unknown	0	0	16	29

^a Ethnicity was defined as Hispanic or Non-Hispanic for the total number of participants and not measured as race.

The NSSQ was completed by all 38 participants as well. The NSSQ is a 5-page instrument that uses an 11-item format measuring social support through the number of self-reported support persons, loss of support, levels of emotional support and aid, functional support, and network support received by the participant through a 5-point

Likert scale for the majority of the items. The mean response for each of the six subscales of the NSSQ is described below in Table 16.

Table 15

Range of Scores for the Nine Subscales of the ADMQ

Subscale	# of items	Possible score	Minimum score	Maximum score	$M \pm SD$
Self-esteem	6	0 – 18	7	18	12.77 ± 2.59
Vigilance	6	0 – 18	0	17	10.38 ± 3.19
Complacency	6	0 – 18	0	12	4.35 ± 3.05
Panic	6	0 – 18	1	12	5.84 ± 3.07
Cop out	6	0 – 18	0	14	4.31 ± 3.14
Defensive avoidance	2	0 – 6	0	6	1.69 ± 1.49
Put it off	2	0 – 6	0	6	1.30 ± 1.47
Pass it on	2	0 – 6	0	6	1.14 ± 1.31
Maladaptive behaviors	18	0 – 54	2	34	14.94 ± 7.92

Table 16

Range of Scores for the Six Subscales of the NSSQ

Subscale	Possible range of scores	Minimum score	Maximum score	$M \pm SD$
Number in network	0 – 24	4	24	10.18 ± 5.24
Emotional support	0 – 384	36	365	128.53 ± 69.80
Aid	0 – 192	13	144	60.84 ± 35.37
Total function	0 – 576	49	509	189.37 ± 103.83
Total network	0 – 264	36	217	95.87 ± 47.32
Total loss	Unlimited range	2	11	6.42 ± 2.65

In addition, participants who completed the NSSQ identified relationship types for the individuals who provided them social support. The ranges of reported social

support for each NSSQ subscale for the NFP nurse home visitors are described in Table 17. Other sources of formal support indicated by the participants were other healthcare providers and educational system support such as teachers or school counselors. Table 18 illustrates the frequency of participants' identified social support from these sources.

Table 17

Range of Scores for the NFP Nurse Home Visitors

Subscales	Possible range of scores	Minimum score	Maximum score	$M \pm SD$
Emotional support	0 – 32 ^a	12	30	22 ± 9.17
Aid	0 – 16 ^a	3	12	7 ± 4.58
Total function score	0 – 48 ^a	15	36	29 ± 12.13

* This range is the possible score if two nurse home visitors are identified (the maximum number reported in the study). The score can increase if multiple nurse home visitors and/or other NFP staff are reported by the participant.

Table 18

Number of Participant Reports and Frequencies for Identified Types of Social Support

Type of social support	N (%)
NFP nurse home visitor	
0	12 (31.6)
1	23 (60.5)
2	3 (7.9)
Other healthcare providers	
0	34 (89.5)
1	4 (10.5)
2	0 (0.0)
Educational system support	
0	31 (81.6)
1	4 (10.5)
2	3 (7.9)

The ESI is an instrument composed of a 20-item, 4-point Likert scale to measure chronic everyday stressors. Each participant in the study completed the ESI. The mean response for the total score of the ESI is described in Table 19.

Table 19

Range of Scores for the ESI

	Minimum score	Maximum score	$M \pm SD$
ESI total score	22	60	36.62 \pm 9.13

Research Questions

The specific analyses for each of the research aims and questions are discussed below.

Specific Aim 1

Describe the decision-making behaviors of parenting adolescent females enrolled in the NFP.

Research question 1. What are the decision-making behaviors for parenting adolescents enrolled in the NFP?

Each of the 38 participants completed the ADMQ which measured decision-making behaviors for the parenting adolescents enrolled in the NFP, both positive and negative. In Table 20, the scores are described for the subscales of the ADMQ including median, range, minimum, maximum, mean and standard deviation. For the positive decision-making behaviors (vigilance subscale), the mean for the adolescents' scores was

10.38 \pm 3.19 out of a possible score of 18. For negative decision-making behaviors (maladaptive behaviors subscale), the mean for the adolescents' scores was 14.94 \pm 7.92 out of a possible score of 54. All of the scores for the copout subscales were relatively low indicating fewer decision-making behaviors such as defensive avoidance, putting off the decision, or passing the decision to another individual.

Table 20

Description of the Scores for the Nine Subscales of the ADMQ

Subscale	Median	Possible Score	Minimum Score	Maximum Score	<i>M</i> \pm <i>SD</i>
Self-esteem	13	0 – 18	7	18	12.77 \pm 2.59
Vigilance	10	0 – 18	0	17	10.38 \pm 3.19
Complacency	4	0 – 18	0	12	4.35 \pm 3.05
Panic	5	0 – 18	1	12	5.84 \pm 3.07
Cop out	4	0 – 18	0	14	4.31 \pm 3.14
Defensive avoidance	2	0 – 6	0	6	1.69 \pm 1.49
Put it off	1	0 – 6	0	6	1.30 \pm 1.47
Pass it on	1	0 – 6	0	6	1.14 \pm 1.31
Maladaptive behaviors	14	0 – 54	2	34	14.94 \pm 7.92

The assumptions for normal distribution including skewness and kurtosis were examined in the figures in Appendix N and appeared reasonable. Additional evaluation from assessing normal Q-Q plots provided supplementary support, where an assumption of normality in the ADMQ scores was reasonable despite the use of a 4-point Likert scale for its items. In addition to the univariate description of the sample means for the ADMQ subscales, bivariate analyses were conducted with the ADMQ subscales using Pearson's *r* correlation coefficients and scatterplots. Correlations between the scores of the subscales

were analyzed using the participants' scores who had no missing values (see Table 21). Statistically significant ($p < .05$) negative correlations were found between the category of maladaptive behaviors and both self-esteem and vigilance. Furthermore, complacency and panic both showed negative correlations ($p < .05$) with self-esteem and vigilance. Maladaptive behaviors were positively correlated ($p < .05$) with the following categories: complacency, panic, cop out, defensive avoidance, put it off and pass it on.

Table 21

Pearson Correlations Coefficients for ADMQ measures

	SE	V	MB	C	P	CO	A	Put	Pass
SE	1.000								
V	0.354	1.000							
MB	-0.512	-0.526	1.000						
C	-0.388	-0.630	0.817	1.000					
P	-0.588	-0.450	0.911	0.653	1.000				
CO	-0.349	-0.289	0.850	0.469	0.702	1.000			
A	-0.207	-0.268	0.646	0.378	0.489	0.782	1.000		
Put	-0.307	0.065	0.594	0.196	0.593	0.726	0.337	1.000	
Pass	-0.260	-0.464	0.648	0.480	0.471	0.708	0.377	0.243	1.000

Note. $N = 29$ (number without any missing data). Correlations with $p < .05$ are in **bold**. SE = self-esteem; V = vigilance; MB = maladaptive behaviors; C = complacency; P = panic; CO = cop out; A = defensive avoidance; Put = put it off; Pass = pass it on.

Specific Aim 2

Explore demographic variables, stressors, and social support that may influence decision-making behaviors in parenting female adolescents enrolled in the NFP.

Research question 2. What variables are predictive of positive decision-making behaviors for parenting adolescents enrolled in the NFP?

Using MANCOVA (multivariate analysis of covariance), the effect of the nurse home visitor total support score, participant's age, grade, employment status and the age of the baby on the subscales of the ADMQ: vigilance and self-esteem were examined. Independent variables were entered simultaneously into the regression model (see Table 22) (Polit, 1996). Regression assumptions were assessed with an analysis of residuals and included an examination of multicollinearity diagnostics. All necessary assumptions were reasonably met. Histograms and scatterplots of these analysis measures are given in Appendix O.

Table 22

MANCOVA of ADMQ Vigilance and Self-Esteem

IV	Wilks' Lambda	Num <i>df</i>	Den <i>df</i>	<i>F</i>	<i>p</i>
Overall	0.564	10	54	1.79	.0853
NSSQ nurse home visitor total function score	0.905	2	27	1.46	.2605
Age	0.947	2	27	0.76	.4788
Grade	0.717	2	27	5.33	.0112
Employment status	0.908	2	27	1.36	.2730
Age of baby	0.993	2	27	0.09	.9101

Note. *N* = 34.

From Table 22, none of the independent variables are predictive of ADMQ vigilance or self-esteem scores in the MANCOVA except for grade. Individual ANCOVAs for each subscale were conducted to explore for what subscales differences were evident and are presented next. Additionally, each of the outcome variables (vigilance [see Table 23] and self-esteem [see Table 24]) was tested in an ANCOVA

model to assess the predictive ability of these variables. From the results presented in Table 23, none of the independent variables are predictive of ADMQ vigilance scores. From Table 24, only grade is predictive of ADMQ self-esteem scores. For each one grade increase, there is an associated increase in predicted mean ADMQ self-esteem score of 1.009, adjusting for the other model predictors.

Table 23

ANCOVA of ADMQ Vigilance

Independent variable	Estimate	SE	95% CI	<i>t</i>	<i>p</i>
NSSQ nurse home visitor total function score	0.108	0.063	(-0.021, 0.236)	1.714	.0978
Age	-0.054	0.741	(-1.583, 1.476)	-0.07	.9433
Grade	-0.415	0.534	(-1.509, 0.680)	-0.78	.4443
Employment status	1.464	1.284	(-1.167, 4.094)	1.14	.2640
Age of baby	-0.047	0.112	(-0.277, 0.182)	-0.43	.6747

Note. $N = 34$. Overall $R^2 = 0.178$, $F(5,28) = 1.21$, $p = .3301$.

Table 24

ANCOVA of ADMQ Self-Esteem

Independent variable	Estimate	SE	95% CI	<i>t</i>	<i>p</i>
NSSQ nurse home visitor total function score	0.034	0.046	(-0.060, 0.129)	0.74	.4626
Age	-0.634	0.548	(-1.756, 0.488)	-1.16	.2567
Grade	1.009	0.392	(0.206, 1.812)	2.58	.0156
Employment status	-0.583	0.942	(-2.513, 1.347)	-0.62	.5412
Age of baby	-0.024	0.082	(-0.193, 0.144)	-0.30	.7677

Note. $N = 34$. Overall $R^2 = 0.219$, $F(5,28) = 1.57$, $p = .2021$.

Research Question 3. What variables are predictive of negative decision-making behaviors for parenting adolescents enrolled in the NFP?

Using MANCOVA, the effect of the nurse home visitor total support score, participant's age, grade, employment status and the age of the baby on the subscales of the ADMQ: maladaptive behaviors, complacency, panic, cop out, defensive avoidance, put it off and pass it on were examined. Independent variables were entered simultaneously into the regression model (see Table 25) (Polit, 1996). MANCOVA assumptions were again examined in residual analyses and with multicollinearity diagnostics and all were reasonably met. Histogram and scatterplots of these analysis measures are provided in Appendix P. Additionally, each of the outcome variables (maladaptive behaviors [see Table 26], complacency [see Table 27], panic [see Table 28], cop out [see Table 29], defensive avoidance [see Table 30], put it off [see Table 31], and pass it on [see Table 32]) was tested in an ANCOVA model to assess the predictive ability of these variables.

None of the independent variables (see Table 25) are predictive of any ADMQ negative decision-making subscales (maladaptive behaviors, complacency, panic, cop out, defensive avoidance, put it off and pass it on) in the MANCOVA. Because a priori interest lay in effects for each of the ADMQ subscale, individual ANCOVAs for each subscale were still conducted. However, it should be recognized that there are potential multiplicity issues and caution is urged in interpreting these results.

Table 25

MANCOVA of ADMQ Negative Decision-Making Measures

IV	Wilks' lambda	Num <i>df</i>	Den <i>df</i>	<i>F</i>	<i>p</i>
Overall	0.331	25	79	1.10	.3600
NSSQ nurse home visitor total function score	0.942	5	21	0.26	.9318
Age	0.892	5	21	0.51	.7658
Grade	0.735	5	21	1.52	.2275
Employment status	0.851	5	21	0.73	.6057
Age of baby	0.923	5	21	0.35	.8792

Note. *N* = 31.

Table 26

ANCOVA of ADMQ Maladaptive Behaviors

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
NSSQ nurse home visitor total function score	-0.013	0.149	(-0.320, 0.293)	-0.090	.9287
Age (years)	-1.444	1.977	(-5.516, 2.628)	-0.730	.4720
Grade	-1.178	1.322	(-3.900, 1.543)	-0.892	.3811
Employment status	-5.277	3.044	(-11.547, 0.992)	-1.734	.0953
Age of baby	-0.126	0.270	(-0.683, 0.431)	-0.467	.6448

Table 27

ANCOVA OF ADMQ Complacency

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
NSSQ nurse home visitor total function score	-0.030	0.059	(-0.153, 0.092)	-0.514	.6121
Age (years)	-1.088	0.778	(-2.710, 0.535)	-1.381	.1796
Grade	-0.042	0.527	(-1.126, 1.043)	-0.079	.9374
Employment status	-1.288	1.213	(-3.786, 1.210)	-1.062	.2984
Age of baby	0.016	0.108	(-0.206, 0.238)	0.149	.8827

Table 28

ANCOVA of ADMQ Panic

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
NSSQ nurse home visitor total function score	0.010	0.060	(-0.114, 0.133)	0.161	.8735
Age (years)	-0.163	0.794	(-1.797, 1.472)	-0.205	.8391
Grade	-0.413	0.530	(-1.506, 0.679)	-0.779	.4431
Employment status	-1.808	1.222	(-4.324, 0.709)	-1.480	.1515
Age of baby	-0.084	0.109	(-0.308, 0.139)	-0.774	.4461

Table 29

ANCOVA of ADMQ Cop Out

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
NSSQ nurse home visitor total function score	0.007	0.059	(-0.115, 0.129)	0.125	.9017
Age (years)	-0.193	0.786	(-1.812, 1.425)	-0.246	.8075
Grade	-0.723	0.525	(-1.805, 0.358)	-1.377	.1807
Employment status	-2.181	1.210	(-4.672, 0.310)	-1.803	.0834
Age of baby	-0.058	0.107	(-0.279, 0.163)	-0.542	.5929

Table 30

ANCOVA of ADMQ Defensive Avoidance

Independent Variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
NSSQ nurse home visitor total function score	-0.009	0.027	(-0.064, 0.047)	-0.318	.7532
Age (years)	0.006	0.356	(-0.727, 0.739)	0.017	.9862
Grade	-0.461	0.238	(-0.951, 0.029)	-1.938	.0641
Employment status	-0.916	0.548	(-2.044, 0.213)	-1.671	.1071
Age of baby	-0.040	0.049	(-0.140, 0.061)	-0.813	.4238

Table 31

ANCOVA of ADMQ Put It Off

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
NSSQ nurse home visitor total function score	0.027	0.029	(-0.032, 0.086)	0.941	.3557
Age (years)	-0.053	0.381	(-0.837, 0.731)	-0.139	.8905
Grade	-0.384	0.254	(-0.908, 0.140)	-1.509	.1438
Employment status	-0.708	0.586	(-1.915, 0.499)	-1.208	.2382
Age of baby	-0.029	0.052	(-0.136, 0.079)	-0.548	.5885

Table 32

ANCOVA of ADMQ Pass It On

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
NSSQ nurse home visitor total function score	-0.011	0.028	(-0.069, 0.047)	-0.394	.6968
Age (years)	-0.147	0.373	(-0.915, 0.621)	-0.393	.6974
Grade	0.122	0.249	(-0.392, 0.635)	0.488	.6298
Employment status	-0.558	0.574	(-1.740, 0.625)	-0.971	.3407
Age of baby	0.010	0.051	(-0.095, 0.115)	0.194	.8476

Additionally, none of the independent variables are predictive of ADMQ maladaptive behavior scores (see Table 26) or ADMQ complacency scores (see Table 27). From Table 28 and 29, none of the independent variables are predictive of the ADMQ panic subscale scores or ADMQ cop out scores, respectively. Moreover, none of the independent variables are predictive of ADMQ defensive avoidance subscale scores (see Table 30), ADMQ put it off subscale scores (see Table 31), or ADMQ pass it on subscale scores (see Table 32).

Exploratory Research Questions

Research question 4. What is the relationship between demographic variables and the outcome of self-reported social support of parenting adolescents enrolled in the NFP?

All MANCOVA assumptions were again examined in residual analyses and with multicollinearity diagnostics with no issues raised concerning assumptions. Histograms and scatterplots of these analysis measures are given in Appendix Q.

In the subsequent tables, the outcomes of the analyses are provided. When examining all NSSQ subscale measures, none of the independent variables are predictive of any NSSQ subscale scores in the MANCOVA except for Hispanic/Latino versus White race/ethnicity groups (see Table 33). Individual ANCOVAs for each NSSQ subscale (emotional support [see Table 34], aid [see Table 35], total function [see Table 36], total network [see Table 37], total loss [see Table 38], nurse home visitor emotional support [see Table 39], nurse home visitor aid [see Table 40], and nurse home visitor

total function score [see Table 41] were conducted to further explore the predictive nature of the independent variables.

Table 33

MANCOVA of NSSQ Measures

Independent variable	Wilks' lambda	Num <i>df</i>	Den <i>df</i>	<i>F</i>	<i>p</i>
Overall	0.234	42	120.71	1.04	.4194
Age	0.811	6	25	0.97	.4659
Race					
Black	0.773	6	25	1.23	.3262
American Indian	0.849	6	25	0.74	.6229
Hispanic/Latino	0.580	6	25	3.02	.0232
White (RC)	—				
Does not live with parents	0.845	6	25	0.77	.6038
Live with BF/husband	0.870	6	25	0.62	.7105
Employment status	0.796	6	25	1.07	.4072

Note. *N* = 38. RC = reference category.

Table 34

ANCOVA of NSSQ Emotional Support

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
Age (years)	1.808	12.202	(-23.112, 26.728)	0.148	0.8832
Black vs. White	-22.503	37.298	(-98.675, 53.669)	-0.603	0.5508
American Indian vs. White	-4.411	42.642	(-91.498, 82.675)	-0.103	0.9183
Hispanic/Latino vs. White	-59.785	33.410	(-128.018, 8.447)	-1.789	0.0836
Does not live with parents	-4.441	32.089	(-69.976, 61.093)	-0.138	0.8908
Lives with boyfriend/husband	18.615	33.984	(-50.790, 88.020)	0.548	0.5879
Employment status	-13.287	28.330	(-71.143, 44.570)	-0.469	0.6425

Table 35

ANCOVA of NSSQ Aid

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
Age (years)	-0.337	6.050	(-12.693, 12.018)	-0.056	.9559
Black vs. White	-15.242	18.493	(-53.009, 22.526)	-0.824	.4163
American Indian vs. White	-9.903	21.143	(-53.082, 33.276)	-0.468	.6429
Hispanic/Latino vs. White	-38.945	16.565	(-72.776, -5.114)	-2.351	.0255
Does not live with parents	6.003	15.910	(-26.490, 38.496)	0.377	.7086
Lives with boyfriend/husband	2.462	16.850	(-31.951, 36.874)	0.146	.8848
Employment status	-8.956	14.046	(-37.643, 19.731)	-0.638	.5286

Table 36

ANCOVA of NSSQ Total Function

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
Age (years)	1.471	18.017	(-35.325, 38.267)	0.082	.9355
Black vs. White	-37.745	55.072	(-150.217, 74.727)	-0.685	.4984
American Indian vs. White	-14.314	62.963	(-142.903, 114.274)	-0.227	.8217
Hispanic/Latino vs. White	-98.730	49.332	(-199.479, 2.019)	-2.001	.0545
Does not live with parents	1.562	47.381	(-95.203, 98.327)	0.033	.9739
Lives with boyfriend/husband	21.077	50.180	(-81.404, 123.558)	0.420	.6775
Employment status	-22.243	41.830	(-107.671, 63.186)	-0.532	.5988

Table 37

ANCOVA of NSSQ Total Network

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
Age (years)	-0.561	8.393	(-17.702, 16.580)	-0.067	.9472
Black vs. White	-11.888	25.655	(-64.282, 40.506)	-0.463	.6464
American Indian vs. White	-16.316	29.331	(-76.217, 43.586)	-0.556	.5822
Hispanic/Latino vs. White	-42.621	22.981	(-89.554, 4.312)	-1.855	.0735
Does not live with parents	10.478	22.072	(-34.599, 55.555)	0.475	.6384
Lives with boyfriend/husband	4.004	23.376	(-43.736, 51.743)	0.171	.8652
Employment status	-7.181	19.486	(-46.977, 32.615)	-0.369	.7151

Table 38

ANCOVA of NSSQ Total Loss

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
Age (years)	0.030	0.648	(-1.295, 1.354)	0.046	.9640
Black vs. White	1.239	1.982	(-2.808, 5.287)	0.625	.5364
American Indian vs. White	1.005	2.266	(-3.623, 5.632)	0.443	.6607
Hispanic/Latino vs. White	0.705	1.775	(-2.920, 4.331)	0.397	.6940
Does not live with parents	1.510	1.705	(-1.972, 4.992)	0.886	.3829
Lives with boyfriend/husband	0.705	1.806	(-2.982, 4.393)	0.391	.6989
Employment status	2.710	1.505	(-0.364, 5.785)	1.801	.0818

Table 39

ANCOVA of NSSQ Nurse Home Visitor Emotional Support

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
Age (years)	2.071	1.068	(-0.110, 4.251)	1.940	.0619
Black vs. White	5.921	3.263	(-0.743, 12.586)	1.815	.0796
American Indian vs. White	-0.963	3.731	(-8.582, 6.657)	-0.258	.7981
Hispanic/Latino vs. White	6.380	2.923	(0.410, 12.350)	2.182	.0370
Does not live with parents	0.377	2.808	(-5.357, 6.111)	0.134	.8940
Lives with boyfriend/husband	0.145	2.973	(-6.218, 5.928)	0.049	.9615
Employment status	-1.955	2.479	(-7.017, 3.108)	-0.789	.4366

Table 40

ANCOVA of NSSQ Nurse Home Visitor Aid

Independent variable	Estimate	<i>SE</i>	95% CI	<i>t</i>	<i>p</i>
Age (years)	0.836	0.495	(-0.174, 1.846)	1.690	.1013
Black vs. White	1.998	1.512	(-1.090, 5.085)	1.322	.1963
American Indian vs. White	-0.110	1.728	(-3.640, 3.420)	-0.063	.9498
Hispanic/Latino vs. White	2.031	1.354	(-0.734, 4.797)	1.500	.1441
Does not live with parents	-0.397	1.301	(-3.053, 2.259)	-0.305	.7624
Lives with boyfriend/husband	-0.313	1.377	(-3.126, 2.500)	-0.227	.8219
Employment status	-1.069	1.148	(-3.414, 1.276)	-0.931	.3592

Table 41

ANCOVA of NSSQ Nurse Home Visitor Total Function Score

Independent variable	Estimate	SE	95% CI	<i>t</i>	<i>p</i>
Age (years)	2.907	1.501	(-0.159, 5.973)	1.936	.0623
Black vs. White	7.919	4.589	(-1.452, 17.291)	1.726	.0947
American Indian vs. White	-1.072	5.246	(-11.786, 9.642)	-0.204	.8394
Hispanic/Latino vs. White	8.411	4.110	(-0.016, 16.805)	2.046	.0496
Does not live with parents	0.019	3.948	(-8.082, 8.043)	0.005	.9961
Lives with boyfriend/husband	-0.458	4.181	(-8.997, 8.081)	-0.109	.9135
Employment status	-3.024	3.485	(-10.142, 4.094)	-0.868	.3925

None of the independent variables are predictive of the following NSSQ subscales: emotional support (see Table 34), total function (see Table 36), total network (see Table 37), total loss (see Table 38), or nurse home visitor aid (see Table 40). However, the Hispanic/Latino versus White comparison was predictive of NSSQ aid scores (see Table 35). In this model, Hispanic/Latino adolescent mothers were significantly lower in their predicted mean NSSQ aid scores compared to White adolescent mothers, adjusting for the other model covariates. Additionally, the Hispanic/Latino versus White comparison was predictive of the NSSQ nurse home visitor emotional support (see Table 39). Hispanic/Latino adolescent mothers were significantly higher in their predicted mean NSSQ nurse home visitor emotional support scores when compared to White adolescent mothers, adjusting for other covariates in the model. The same was true for the subscale of the NSSQ nurse home visitor total function score (see Table 41); Hispanic/Latino versus White comparison were marginally predictive with a *p* value of 0.0496. When comparing Hispanic/Latino adolescent mothers to White

adolescent mothers, Hispanic/Latinos were marginally higher in their mean predicted NSSQ nurse home visitor total function scores when compared to Whites after adjusting for the other model predictors.

Based on the finding that race/ethnicity was a predictor of social support measures, cross tabulations were performed to further examine the identified nurse home visitor social support by race and ethnicity (see Table 42). Table 42 demonstrates that White/Non-Hispanic and Hispanic/Latino participants reported similar percentages of nurse home visitor social support; both of these races were the only two in the sample that reported multiple nurse home visitor support for a single participant. Two of the White/Non-Hispanic participants reported multiple nurse home visitor support, while only one Hispanic/Latino participant reported multiple nurse home visitor support. The findings indicate that a total of 29 nurse home visitors that provided social support to the participants in the study.

Table 42

Cross Tabulations of Race/Ethnicity and Number of Identified Nurse Home Visitor Social Support

	Reported zero NHV providing social support	Reported one NHV providing social support	Reported two NHV providing social support	Total
White/Non-Hispanic	5	6	2	13
Black	2	7	0	9
American Indian	4	2	0	6
Hispanic/Latino	1	8	1	10
Total	12	23	3	38

Note. NHV = nurse home visitors.

In addition to the cross tabulations, the PI also determined the adequacy of social support measures based on the cut off score (22) for NSSQ total function. Participants' NSSQ total function score was divided by the participants' NSSQ total network. The frequencies of these scores are depicted in Table 43, with 78.9% of the sample indicating that they have less than adequate social support in their life.

Research question 5. What is the relationship between everyday stressors and the outcome of self-reported social support of parenting adolescents enrolled in the NFP?

Table 43

Frequencies of Adequate Versus Non-Adequate Social Support Scores

	<i>N</i>	%
Non-adequate social support (< 22)	30	78.9
Adequate social support (\geq 22)	8	21.1

Correlation assumptions were assessed with normal Q-Q plots and normality tests; all assumptions were reasonably met. Histograms and scatterplots of these analyses are depicted in Appendix R. Bivariate analyses were conducted with the NSSQ subscales and the total score of the ESI using Pearson's *r* correlation coefficients and with examination of scatterplots. Examination of the correlations was conducted using the participants' scores who had no missing values (see Table 44).

The ESI was not correlated with any of the subscales of the NSSQ. Statistically significant positive correlations were found between the subscale of NSSQ emotional support and the subscales of: NSSQ aid, NSSQ total function, and NSSQ total network. Additionally, NSSQ aid was significantly positively correlated with the subscales of

NSSQ total function and NSSQ total network; total function and total network were also significantly correlated.

Table 44

Pearson Correlations Coefficients for NSSQ and ESI Measures

	ES	Aid	TF	TN	TL	NHVES	NHVA	NHVF	ESI
ES	1.000								
Aid	0.944	1.000							
TF	0.994	0.975	1.000						
TN	0.942	0.921	0.947	1.000					
TL	0.037	0.147	0.075	0.175	1.000				
NHVES	-0.049	0.047	-0.017	-0.056	0.215	1.000			
NHVA	0.053	0.161	0.091	-0.016	0.195	0.853	1.000		
NHVF	-0.018	0.084	0.016	-0.046	0.216	0.986	0.927	1.000	
ESI	0.008	-0.035	-0.007	0.038	0.142	0.129	0.095	0.123	1.000

Note. $N = 37$ (number of participants without any missing data). Correlations with $p < .05$ are in bold. ES = NSSQ emotional support; Aid = NSSQ aid; TF = NSSQ total function; TN = NSSQ total network; TL = NSSQ total loss; NHVES = NSSQ nurse home visitor emotional support; NHVA = NSSQ nurse home visitor aid; NHVF = NSSQ nurse home visitor total function score; ESI = ESI total score.

When specifically examining the nurse home visitor's impact on the participant's perceived level of social support, the reported NSSQ nurse home visitor emotional support was significantly positively correlated with the subscales of nurse home visitor aid and nurse home visitor total function score. Nurse home visitor aid and nurse home visitor total function score were also significantly positively correlated.

Summary

Thirty-eight adolescent mothers enrolled in the NFP were surveyed using the ADMQ, NSSQ, ESI, and ADQ. In this sample, the relationships between decision-making behaviors, social support, everyday chronic stressors and demographic factors

were explored and measured using the ADMQ, NSSQ, ESI, and ADQ. The average age of the participants was 17 and the majority were White/Non-Hispanic. Most of the adolescent mothers lived with their parents and had never been married. A significant number of the adolescents were currently enrolled in school and were not employed. For the majority of the adolescents, this baby was their first pregnancy.

Of the independent variables, grade level was predictive of all ADMQ positive decision-making behaviors within the MANCOVA modeling. Additionally, grade level was predictive of the ADMQ subscale scores for self-esteem. The variables did not adequately explain negative decision-making. No variables were found to be predictive for the combination of all ADMQ negative decision-making behaviors or the individual negative decision-making behavior subscales of the ADMQ.

For all the NSSQ subscales, the only variable in the study found to be predictive was Hispanic/Latino versus White. Furthermore, Hispanic/Latinos within the sample were found to have significantly lower mean scores than Whites for the NSSQ subscale of aid. For the variables of nurse home visitor emotional support and the nurse home visitor total function score, Hispanic/Latinos were found to have significantly higher mean scores when compared to Whites. Although other variables were not found to be significant in this study, current literature supports their inclusion in studies related to decision-making and social support for adolescents. The NSSQ and ESI did not demonstrate statistically significant correlations within this study. However, correlations of nine pairs of the subscales within the NSSQ were found to be statistically significant.

In addition, correlations of 25 pairs of the ADMQ subscale variables were found to be statistically significant.

The overall Cronbach's alpha coefficients for the ESI (.67) and NSSQ (.95) were above an optimal level and support the use of the instruments' reliability. All of the subscales of the NSSQ reached optimal levels with all of the scales' coefficients being ≥ 0.087 . Four of the subscales of the ADMQ were appropriate and supported the use of the instrument.

CHAPTER V

DISCUSSION

The purpose of this study was to describe the decision-making behaviors of parenting adolescents enrolled in the Nurse-Family Partnership (NFP) and to explore predictive variables that may have influenced these behaviors for parenting adolescents enrolled in the NFP using the following tools: the Adolescent Decision Making Questionnaire (ADMQ), Norbeck's Social Support Questionnaire (NSSQ), Everyday Stressors Index (ESI) and the Adolescent Demographic Questionnaire (ADQ). In this chapter, the interpretation of the results will be discussed. The limitations and strengths of the study will be provided and recommendations for future research and nursing implications are presented.

Properties of the Person

Participant's Age

Within the study sample, the mean age of the participants was 17.6 with a median age of 17.9 years. For North Carolina (NC) and the United States (US), the median age of participants in the NFP was reported as 19 years. This value includes all participants in the NFP regardless of age, as compared to the study sample which only included adolescents enrolled in the NFP between the ages of 13 and 18 years (Nurse-Family Partnership, 2011f, 2012b). Despite the variance between the NFP population and the study sample ages, the median age was comparable. Upon examination of the age range

for study participants, the majority of the sample was older adolescents and comparable to the age of majority in NC (18 years of age) (North Carolina General Assembly, n.d.). The age of majority is the term used when a person is considered to make appropriate decisions and to function as an adult (Net Industries, 2012). Therefore, the sample and analyses results could potentially represent more closely the decision-making behaviors of adults versus adolescents of lower ages.

While there was not a statistically significant relationship between the NFP participant's age and decision-making behaviors (positive or negative) or social support levels, previous research has been inconclusive on the effects of age on decision-making behaviors and perceived social support. Several researchers have indicated that age is a significant predictor related to these variables (Bosma et al., 1996; Gardner & Steinburg, 2005; Ormand et al., 1991), while others have concluded that age is not a significant variable in the relationship between decision making behaviors and social support (Commendador, 2007; Mann et al., 1989; Peden et al., 2004), similar to the results of this research.

Some of the results within the study may be attributed to the point of time of the data collection. The variable of age was collected at the time of the interview process. The participants could also range between 6 months and two years post-partum. The NFP curriculum focuses on varying content at different points of the program. Therefore, future research would benefit from measurement of the amount of time the participant has completed in the NFP program or the age at delivery versus the age at the time of the interview process.

Living Status

The majority of the participants (65.8%) within the sample reported living with a parent or parents. The principal investigator (PI) did not include a separation of the category to specify whether the adolescent lived in a one or two parent household on the ADQ. Future research should include separation of this category for further examination of this variable. While researchers have shown that living status impacts attitudes towards pregnancy (Jaccard et al., 2003) and decision-making behaviors (Brown & Mann, 1991; Oman et al., 2005), living with parents and/or living with a boyfriend, husband or significant other were not found to be significant variables in the prediction of social support levels within the study.

Race or Ethnicity

Because there are disparities in health outcomes for minority adolescents, it was critical to include minority representation in the study. This representation was achieved despite convenience sampling. The categories of Asian/Pacific Islander and Other/Mixed were not represented in the sample; however, there was a diverse racial and ethnic sampling within the participants for all other races and ethnicities. Race and ethnicity were not found to be significant predictors of emotional support, total function, total network, total loss or nurse home visitor aid. Importantly, race and ethnicity were significant predictors for the variables of aid, nurse home visitor emotional support and nurse home visitor total function score when comparing Hispanic/Latino and White participants. For aid, Hispanic/Latino participants had significantly lower predicted mean scores when compared to White participants. The category of aid for the NSSQ

encompassed support from all persons, including, but not limited to family, friends, healthcare providers, teachers and clergy. Aid was assessed through immediate help measures from these individuals such as monetary or transportation support or assistance if the adolescent was sick and unable to help herself. Despite the current literature that indicates that Hispanic/Latinos have high levels of familial and community support (Skogrand, Hatch, & Singh, 2005), this research indicates that Hispanic/Latino parenting adolescents have significantly less aid from a wide selection of persons versus their White counterparts. Future research should include non-English speaking Hispanic/Latinos to possibly compare the results of social support levels to those who speak and understand English.

When considering these findings, more information is needed about the participants to completely understand why aid is lower for Hispanic/Latino parenting adolescents enrolled in the NFP than Whites. Some of the potential reasons may include the transient nature of Hispanic/Latino families (The University of North Carolina at Greensboro, 2003). In NC, 8.4% of the population is Hispanic/Latino, with the majority being of Mexican descent (US Census Bureau, 2011). Additionally, the US Census Bureau reports a population change for Hispanic/Latino community in NC of 111.1% between the years of 2000 and 2010. If the Hispanic/Latino families are in transition into the US, the persons providing community and familial social support may remain in the participant's birth country. Due to the lack of proximity, the adolescent may consider these persons no longer sources of social support. If the adolescent or her family members are illegal immigrants in the US, it is reasonable to assume that she might

provide less than full disclosure on her responses in fear of reporting her or her family's status. Additionally, adolescents without legal citizenship may feel that they cannot reach out for other sources of social support in the community or with peers for fear of reporting. A lack of citizenship may be a deterrent for participation in programs such as the NFP or in research studies. Citizenship was not measured in the study and is not measured by the NFP program.

Another potential reason for the lack of reported community and familial support within the sample may relate to the cultural and religious practices and expectations within the Hispanic/Latino community. The majority of this population holds strong Catholic religious beliefs which include that women are expected to remain virgins until marriage (The University of North Carolina at Greensboro, 2003). Due to the religious expectations, adolescents who are pregnant or parenting and not married may not feel supported by their community, family or church.

Conversely, Hispanic/Latino participants had significantly higher predicted mean scores for nurse home visitor emotional support scores when compared to White participants and marginally higher predicted mean scores for nurse home visitor total function scores. This finding indicates that parenting adolescents enrolled in the NFP of Hispanic/Latino origin perceived higher emotional support social support and total function social support from their nurse home visitors than compared to White/Non-Hispanic participants in the study. Therefore, if the adolescent does have decreased community and peer support due to transition, fear of revealing immigration status, or other reasons, it is possible that the nurse home visitor has replaced some of the other

sources of social support. This support could be due to trust and the relationships established over the pregnancy and parenting years. This finding is especially important for NFP strategic planning; future NFP research should focus on why other race and ethnicities do not perceive high levels of social support from the nurse home visitors and implement strategies to enhance social support measure for other races and ethnicities. Perhaps interventional programs would benefit from measurement of social support levels; when participants' levels were low, nurse intervention may potentially fill the void of social support. Additionally, this information is critical when addressing health disparities for Hispanic/Latino populations, who typically access the healthcare system less than Whites, and receive fewer healthcare services (LaVeist, 2002). Future research would benefit from inclusion of the participants' point of entry into the NFP program and initial date of access of prenatal health. This study could be the foundation for innovative strategies that incorporate larger community health programs using nurse home visitation or the components of the NFP's fidelity model to increase the healthcare access for this population.

One variable that was not included on the ADQ instrument was the race or ethnicity of the nurse home visitor. It is possible that if the race or ethnicity of the nurse home visitor was not congruent with the NFP participant, that the levels of perceived social support might be influenced. History within the healthcare system and prior research trials have created distrust and fear between minority populations and the healthcare system (LaVeist, 2002). Particularly in the rural south, the setting of the many of the study sites, health disparities are especially widespread (LaVeist, 2002), elevating

the risk for distrust and fear. Having a nurse home visitor of the same race or ethnicity therefore might increase perceived social support through higher levels of trust with the nurse. For NFP adolescents of Hispanic/Latino origin having English as their second language, it is possible that the adolescent was paired with a Hispanic/Latino nurse home visitor, a nurse home visitor that was fluent in Spanish or an interpreter (likely Hispanic/Latino) from the NFP in addition to the nurse home visitor. Language differences among patients and healthcare providers have been demonstrated in the literature as barriers to and predictors of access and utilization of the healthcare system (LaVeist, 2002; Ver Ploeg & Perrin, 2004). Specifically, language proficiency has been shown to enhance the relationship between healthcare providers and patients (Ver Ploeg & Perrin, 2004). Potentially, the NFP should consider adding second language programs within the NFP model to further enhance the healthcare outcomes of the participants who speak English as a second language. It is possible that the social support scores were influenced by the dynamics of the relationships between the ethnic make-up and Spanish speaking ability of the adolescents and the NFP nurse home visitors and/or interpreters. For the one Hispanic/Latino adolescent that reported two individuals from the NFP providing support, this could be true. Interpreters may have been used earlier in the program prior to the adolescent's development of proficiency in English.

Some of the variance for the significant findings for higher nurse home visitor emotional support and total function score may be explained through the presence of two individuals attending each NFP session. Certain NFP sites used in the study utilized an interpreter at the home visitation sessions in addition to the nurse. Other sites used multi-

lingual nurse home visitors. If the Hispanic/Latino adolescents reported an interpreter as an additional source of NFP support or in place of the nurse home visitor, this additional person could account for some of the variance in the difference in scores. However, some participants in the study did not indicate on the NSSQ that these individuals were nurse home visitors or interpreters, but rather that the sources of social support were part of the NFP program by writing NFP versus nurse home visitor. For data measurement, both responses included as NFP and nurse home visitor were coded as nurse home visitors support. Therefore, it is possible the adolescents identified the interpreter as the source of support rather than the nurse home visitor. Yet, inclusion criteria for this study included that the participants must read, write and understand English and therefore it can be assumed that interpreters were not used by the NFP programs for the participants in this study.

Interpreters were not used in the collection of any study data related to the study and all participants were able to read, write, and understand English. However, if the adolescent was in the process of learning English, interpreters may have been used previously in the program in conjunction with the nurse home visitor and as the adolescent progressed in her English speaking abilities, the interpreter was removed from the in-home interactions. Future use of the NSSQ should include specific instructions to the participants to explicitly define the relationship of support rather than a general category.

Marital Status

Marital status was not used in any of the regression modeling. However, it was an important variable to include in the demographic instrument to assist in describing the sample. Thirty-one (81.6%) of the participants reported never having been married and five participants (13.2%) reported currently being married at the time of completion of the surveys. Future research could include this variable into the regression modeling to see if having a spouse impacts decision-making behaviors or perceived levels of social support.

Public or Private Education and Educational Levels

The type of schooling was not used in any of the regression modeling within the study. However, it provided insight into the type of education the NFP parenting adolescents were currently receiving. The majority of the sample (73.7%) was enrolled in public school.

The ADQ also included a question about the highest grade level that the participant had completed successfully. The majority of the participants had completed the tenth grade or above (81.6%), while 10.5% of the participants had completed high school and had taken some college courses. Of all the variables included in the MANCOVA and ANCOVA modeling for decision-making behaviors, the completed grade level was the only significant variable. A significant relationship was found between the ADMQ self-esteem subscale and grade level completed. For each grade completed, there is a predicted mean increase of 1.009 for self-esteem scores.

Employment Status and Hours Worked Per Week

Findings from the study indicated that there was not a significant relationship between employment status and perceived social support or nurse home visitor social support. This finding contraindicates research that indicates that employment status is a predictive variable for maternal behaviors and social support (Chandra et al., 2005, Klitsch, 1991; Travis, Bisogni, and Ranzenhofer, 2010). Twenty-six percent of the participants in the study were employed with an average of approximately eight hours worked per week.

Age of Baby

While previous research had not examined the age of the baby in relationship with decision-making behaviors, experience often influences one's decisions. It can be reasonably assumed that the longer one parents, the more parenting experience they receive, and therefore it is possible that decision-making behaviors might be influenced. Based on this assumption, the age of the baby was included in the MANCOVA and ANCOVA modeling related to subscales of the ADMQ. However, the age of baby was not found to be a significant factor in any of the subscales of the ADMQ for positive or negative decision-making. Perhaps future research could compare adolescents who are pregnant versus adolescents who are parenting to determine if there is a difference based on parenting experience.

Properties of Situation

Everyday Stressors

While other researchers have demonstrated relationships between everyday chronic stressors and social support (DeJoseph et al., 1996; Hall et al., 1991; 1996), this study did not support those findings. The ESI was not correlated with any of the subscales of the NSSQ or the any of the nurse home visitor NSSQ subscales. This study was the first study to explore the relationship between ESI scores and nurse home visitor social support subscales of the NSSQ.

In other research, Hall (1990), designer of the ESI and previous researcher of everyday chronic stressors, identified cut off levels within the overall score of the ESI. Hall (1990) identified three levels of ESI scores: a) 0-14, b) 15-34 and c) 35 and higher; higher scores on the ESI indicate increased everyday chronic stressors. The two higher subscales of the scores have been associated with increased risk of depression with the highest subscale indicating more risks (Hall, 1990). These findings could indicate increased risk for other medical diagnoses or negative health outcomes.

The results of this study indicated that 16 (42.1%) participants fell in the lowest range of ESI scores and 21 (55.3%) participants in the moderate range of ESI scores. Only one participant (2.6%) scored above 35. The majority of the sample of NFP parenting adolescents fell in the moderate category and could potentially be at an increased risk for depression, other medical illnesses or negative health outcomes, although these variables were not measured within this research. The ESI mean could not be compared to other similar populations because this study was the first to examine

the ESI with adolescents. However, the ESI mean (36.62) is very similar to the pilot study by Lane and Kohlenberg (2011) who reported the ESI mean as 34.82. For the statistical analyses in this study, the ESI scores were used as a continuous variable.

Adequate or Inadequate Social Support

Nurse and Nurse Home Visitor Social Support

A considerable amount of research has demonstrated that nurses can serve as social support sources (Bussing et al., 2003; Gigliotti, 2004; Mechanic, 1977; Olds, Henderson, Tatelbaum et al., 1986; Peterson & Bredow, 2004; M. Stewart, 1993; M. Stewart & Tilden, 1995). Additionally, researchers have shown that gender plays a role in the importance of nurses as social support sources, with women reporting a higher value for nurse social support (Koivula et al., 2002). The findings within this study indicate that for parenting adolescents enrolled in the NFP, the perceived nurse social support levels (68.4%) are much higher than other reported literature. Of the 26 participants that reported nurse home visitor support, three of the participants reported more than one individual from the NFP that was providing social support; these additional NFP individuals are not reflected in the above percentage. Nurse social support within the literature ranges from 0% to 27.5% (Bertero, 2000; Lane & Kohlenberg, 2011; Norbeck, 1985; Schaffer & Lia-Hoagberg, 1997; Wagle et al., 1997), and some of these studies combine the categories of nurses and other healthcare providers and therefore do not accurately reflect the specific percentages of perceived nurse social support. These findings support that social support is a strong component of the NFP

program, which could be modeled by other nursing entities to improve patients' perception of social support levels.

The levels of nurse home visitor support may have been impacted by multiple NFP personnel. For example, a participant may have been assigned a nurse home visitor but due to attrition, the nurse home visitor may have been replaced with a new person. Therefore, the participant could potentially report two nurse home visitors giving social support or consider one of the nurse home visitors as a loss depending on the length and strength of the relationship between the participant and the nurse home visitor. Conversely, if the participant felt that the nurse home visitor attrition was a social support loss, the participant may be less open to forming new relationships and the perceived social supports levels may be affected in a negative manner.

Moreover, the NFP program offers many events and educational services at the NFP local site office. The participant may have potentially met other nurse home visitors or NFP staff or supervisors and developed a relationship with these individuals. If the relationships have developed, it is possible that the participant would report multiple nurse home visitor support on the NSSQ when in actuality, the nurse providing the support was not necessarily the nurse entering the home during scheduled visits.

The adequacy of the social support provided to the participant by one individual has been defined by the PI as a score of 22 or greater for the category of NSSQ total function based on social support adequacy cut off scores defined by previous literature (Norbeck, 2001; Norbeck et al., 1989; 1996). Within this sample, nine of the 38 participants (23.7%) identified that the level of perceived total function score from the

nurse home visitor was greater than or equal to 22. While 68.4% of the participants felt that they received social support from the nurse home visitor, this percentage indicates that almost one-fourth (23.7%) of the sample received fully adequate support from the nurse home visitor alone without consideration of any other sources of social support.

Correlations of the nurse home visitor social support subscales were also examined in the analyses. In the results, the NSSQ nurse home visitor emotional support was significantly positively correlated with the subscales of nurse home visitor aid and nurse home visitor total function score. This result indicates that if adolescents perceive an increase in nurse home visitor emotional support, then they also perceive an increase in both the nurse home visitor aid and total function score (a combination of both emotional support and aid). Nurse home visitor aid and nurse home visitor total function score were also significantly positively correlated.

Emotional Support, Aid, Total Function, Total Loss, and Total Network

Within the study, statistically significant positive correlations were found between the subscale of NSSQ emotional support and the subscales of: NSSQ aid, NSSQ total function, and NSSQ total network. Additionally, NSSQ aid was significantly positively correlated with the subscales of NSSQ total function and NSSQ total network; total function and total network were also significantly correlated. Comparably, in the pilot study, the subscale of NSSQ emotional support was significantly correlated with NSSQ aid and NSSQ total network (Lane & Kohlenberg, 2011). Additionally, the NSSQ subscale total network was significantly correlated with aid (Lane & Kohlenberg).

When comparing the mean scores for the subscales of the NSSQ, the parenting adolescent participants in the NFP scored significantly higher in perceived social support as compared to the studies in which the tool has been used with other adolescent populations. In the adolescent literature related to the NSSQ, Sin and colleagues (2005) did not report mean scores; however, Kang and colleagues (1998) reported mean values within groups of the study for NSSQ total function (range: 82.6 to 211.4), NSSQ total network (range: 109.5 to 121.8) and NSSQ aid (range: 58.8 to 68.3) in relationship to adolescents with asthma. For the category of NSSQ total function, parenting adolescents enrolled in the NFP had a mean score of 189.37.

Additionally, participants in the pilot study had a much lower mean score as compared to the mean score of the participants in this study (132.45) (Lane & Kohlenberg, 2011). The pilot study included pregnant and parenting adolescents involved with a nurse health promotion program; however, the program was not a nurse home visitation structure and did not include the fidelity components of the NFP. Other comparisons between the NFP social support mean results and the pilot study mean results respectively included: a) NSSQ number in network (10.18, 7.82), b) NSSQ emotional support (128.53, 92.27), c) NSSQ aid (60.84, 41.18), d) NSSQ total network (95.87, 75.18), e) NSSQ total loss (6.42, 3.36), f) NSSQ nurse emotional support (22, 0), g) NSSQ nurse aid (7, 0) and h) NSSQ nurse total function (29, 0) (Lane & Kohlenberg, 2011). These results indicate that the parenting participants enrolled in the NFP report a much higher perceived social support than similar adolescents living in the same region and much higher social support levels than adolescents of similar ages living with

asthma. Strikingly, it is interesting that the NFP participants also reported a greater loss of support than the participants of the pilot study and this should be explored in future research. This loss may be attributed to a perceived crisis state during pregnancy or parenthood for some adolescents, in which they perceive that this situation is a time in which they need higher levels of social support.

Greater Likelihood of Positive Outcomes (Positive Decision-Making Behaviors) and Negative Outcomes (Maladaptive Decision-Making Behaviors)

The findings of this study indicated statistically significant negative correlations between the category of maladaptive behaviors and both self-esteem and vigilance. This finding indicates that as maladaptive decision-making behaviors decrease, then self-esteem and vigilance (both positive decision-making behaviors) increase; the inverse relationship is also true. Radford and colleagues (1993) also showed negative correlations between the subscales of self-esteem and maladaptive decision-making behaviors.

Furthermore, complacency and panic (both subscales of maladaptive decision-making behaviors) were found to have statistically significant negative correlations with self-esteem and vigilance within the study. Again, as the adolescent's complacency about the decision decreases, the self-esteem and vigilance in the decision-making process increases (and vice versa). In previous research, the findings concur; complacency was found to have a negative correlation with self-esteem (Radford et al., 1993).

The same relationship was shown in relation to panic. As the adolescent decreases her panic about the decision, the levels of self-esteem and vigilance increase. The correlational results between panic and self-esteem subscales support previous research findings by Franken and Muris (2005). Other findings indicated that maladaptive behaviors were positively correlated with the following categories: complacency, panic, cop out, defensive avoidance, put it off and pass it on, indicating as the adolescent increases her negative coping mechanisms, specific maladaptive decision-making behaviors also increase.

Only three studies have been used in the US to examine the ADMQ and associated mean scores for the subscales (Commendador 2007; 2011; Lane & Kohlenberg, 2011). Participants in Commendador's research were between the ages of 14 and 17, while participants in Lane and Kohlenberg's study were 13 to 18 years of age.

In this study, the mean for the ADMQ subscale of self-esteem was 12.77 out of a total of 18 (with higher scores indicating higher levels of self-esteem), as compared to 12.19 (Commendador, 2007), 11.87 (Commendador, 2011), and 11.27 (Lane & Kohlenberg, 2011). Similarly, the ADMQ mean for vigilance (10.38) was very comparable to other research findings. Commendador reported means for vigilance of 10.29 (2007) and 10.62 (2011); Lane and Kohlenberg reported in a pilot study the mean for the ADMQ vigilance subscale as 9.27. Additionally, the maladaptive behavior mean for this study was 14.94 as compared to 14.71 (Commendador, 2007), 17.31 (Commendador, 2011), and 14.64 (Lane & Kohlenberg), indicating that the results from

the ADMQ are very similar to the other research findings for this age range of adolescents in the United States.

Other Findings

According to Kost et al. (2010), 750,000 pregnancies occur each year in the US to adolescents between the ages of 15 and 19, representing 10% of all US births (Martin et al., 2011). However, two-thirds of the pregnancies for this age range occur between 18 and 19 years of age (Kost et al.). Additionally, of these births, the majority of the births are the first child, with only 18% of these births representing a second or higher order birth (Martin et al.). Within this study, all of the adolescent mothers were parenting their first child. Interestingly, only 5.3% of the mothers were pregnant at the time of the interview with their second child, supporting the findings that the NFP program promotes longer intervals between first and second children (Kitzman et al., 2000; Olds et al., 2002; Olds, Robinson et al., 2004), fewer subsequent pregnancies (Kitzman et al., 2000; Olds et al., 2002) and significantly fewer second pregnancies (Kitzman et al., 1997, 2000; Olds et al., 2002).

Furthermore, Norbeck's Model of Social Support provided an appropriate lens for studying these concepts for adolescents who were parenting and enrolled in the NFP. While the relationships and predictive ability of the variables were limited in the results, a larger sample may give more insight into this phenomenon. Also, a more comprehensive view of the properties of the person and the properties of the situation may enhance the magnitude of the findings using this theoretical framework.

Strengths of the Study

Several contributions to nursing knowledge are provided through this research. This study is the first research in the literature to describe decision-making behaviors in the context of the variables of social support, everyday chronic stressors and other demographic factors. Within the NFP's empirical research, this study is the first to assess the variable of decision-making as an unintended outcome of the NFP. It provides a model for studying adolescents and their decision-making behaviors. This model could be altered to study other unintended outcomes of the NFP. Additionally, this study is the first study within the NFP literature to examine the perceived levels of nurse home visitor social support from adolescent participants in the program. Knowledge generated by this study may be the foundation for future studies related to these concepts. Based on the social support results for Hispanics/Latinos compared to Whites, this study lays the groundwork for future exploration of innovative community health programs utilizing nurse home visitation to increase the healthcare access for this population.

Recommendations for Future Research

Based on the findings of this study, the following recommendations are suggested for future research:

1. replicate the study with a larger sample including both pregnant and parenting adolescents;
2. replicate the study with a larger sample and compare results with pregnant and parenting adolescents not receiving health promotion program support;

3. examine facilitators and barriers to decision-making behaviors among adolescent NFP participants;
4. further explore the relationships of social support differences between Hispanic/Latino and White NFP adolescent participants through qualitative inquiry;
5. replicate the study including non-English speaking participants to examine acculturation differences between the groups;
6. replicate the study on a national level and international including NFP sites across the US and in other countries implementing the NFP program;
7. utilize longitudinal designs that includes interval measures for decision-making behaviors and social support for adolescent NFP participants;
8. utilize longitudinal designs to measure the effectiveness of the NFP on decision-making behaviors for adolescents enrolled in the NFP while controlling for other variables in the model;
9. utilize qualitative research designs to discover unintended outcomes of the NFP; and
10. measure the nurse home visitor's perception of social support provided to participants in the NFP and compare to the adolescent's perception (both overall and in dyads).

Implications for Nursing and Healthcare

The varying perception of vulnerability for adolescents may lead adolescents to believe that they are not subject to negative health outcomes or that their decision-making

behaviors can directly impact their life or health outcomes. Life transitions such as adolescence contribute to changing stressors and social support within their lives. Adding additional life transitions such as pregnancy or parenting during this period for adolescents contribute to the potential for negative health outcomes and may impact an individual's views on decision-making and priorities. If adolescents have very limited adequate support such as lack of family, spouse or partner support, and moderate levels of stressors during a dual transition developmental period, both for adolescence and pregnancy, social support may be more critical to the success of health outcomes. In this sample, the majority of the adolescents had less than adequate social support (78.9%) and moderate levels of stressors (55.3%).

For parenting adolescents, these priorities and decision-making behaviors may directly impact the health outcomes of their child/children. Nurses are critical care providers for adolescents during these transitions and can positively influence decision-making behaviors and provide social support for the adolescents in roles such as parenting. While underutilized, this study supports that nurses can serve as social support resources for adolescents. Within the NFP structure, the nurse home visitor is present from the beginning stages of pregnancy until the child is two years of age. The nurse home visitor has the opportunity to impact these perceptions through education, resources and social support. The nurse home visitor can develop relationships with the adolescent and her child, creating a system of social support. This social support can augment the levels of social support that the adolescent is already receiving from friends, family and other individuals.

Additionally, nurses from other segments of the nursing profession may benefit from this knowledge. Nurses and nurse practitioners in the areas of school health, health departments, clinics, or medical offices can assist in identification of adolescents who are pregnant within the school system and direct them to local NFP agencies for assistance. Also, decision-making behaviors are an important component of prenatal health behaviors. Nurses involved in prenatal care can become advocates for positive decision-making during this period, which can directly impact the health of the mother and the fetus, and ultimately the long-term health of the child.

This research supports that nurses can serve as social support sources despite the fact that much of the literature indicates that patients do not perceive nurses as high levels social support within their lives (Baillie et al., 1988; Bertero, 2000; Lane & Kohlenberg, 2011; Norbeck, 1985; Schaffer & Lia-Hoagberg, 1997; Wagle et al, 1997). This high level of perceived nurse social support may be attributed to the intensity of the NFP program and curriculum and the frequency of the nurse home visits. Also, these results support previous research that the use of nurses as social support is effective (Norbeck et al., 1996). Within most of the research, nurses were not specifically examined as a source of social support but rather a clustering of healthcare providers in general or a combination of healthcare providers and counselors. This research contributes to the nursing literature by examining nurses' roles, specifically the nurse home visitor social support role, which had not been previously discussed in the literature.

The results of this study directly relates to nursing and other disciplines which assist adolescents in decision-making options. By understanding decision-making in

adolescents who are parenting, this information can be utilized to assist adolescents who are parenting to make preeminent decisions which may impact their health and future and/or the health and future of their children. Nurses are critical in the design of prevention and education programs related to decision-making behaviors which can target at-risk populations. By helping adolescents make more positive decisions, it is possible to improve health outcomes, enhance future successes for this population and subsequent generations, and reduce adolescent pregnancy or subsequent pregnancies. In addition, this empirical data may be used to generate financial allocations for funding of future NFP agencies and potentially provide new knowledge for the establishment of other health promotion programs that would prevent primary or subsequent adolescent pregnancy.

On a national healthcare perspective, there is strong support towards nurse home visitation programs and other community health programs. With the rising costs of healthcare, the focus has moved from hospital based care to community care services to meet healthcare needs and to reduce healthcare dollars spent. The NFP has shown up to a \$5.70 return for each dollar invested (Karoely, Kilburn, & Cannon, 2005; Nurse-Family Partnership, 2011a; Washington State Institute for Public Policy, 2004). This investment return in combination with the empirical results evidencing the multitude of outcomes, adds even more rigor to the value of the NFP program in the midst of a national deficit, a declining economy and decreased budgets for health programs. With these factors impacting the health of parenting adolescents, it is even more crucial to fund programs that work (Nurse-Family Partnership, 2008).

Currently, President Obama's administration values such programs and has supported home visitation programs for vulnerable children and families with \$224 million in grant monies (Gordon, R., 2011). Other components within Obama's initiative include: a) \$8.6 billion in federal funding over a decade, b) monetary funding for a variety of programs, c) research and grant monies and d) an increased outreach to 450,000 families by 2019 (Nurse-Family Partnership Service Office, 2009). With this move towards nurse home visitation, the opportunity to reach more adolescent mothers and their children is very promising.

With the high rates of poverty for minority adolescents and their children, the concern for reduction of health disparities related to cyclic patterns of early pregnancy, negative health outcomes and poverty is critical. These results indicate that social support aid for Hispanic/Latino adolescents enrolled in the NFP is significantly lower than White NFP adolescent participants. However, this study demonstrated that the role of the nurse home visitor greatly improves the emotional social support and the total function social support for Hispanic/Latino NFP adolescents and could potentially have a direct impact on the health outcomes for these adolescents. Since this subset (Hispanic/Latino population) of the study sample has indicated decreased NSSQ aid social support from other persons within their lives, it is even more critical that the nurse home visitor be involved in the life of the adolescent and her child to buffer the effects of decreased support. Furthermore, the NFP's main goals include establishment of self-sufficiency, improvement in health outcomes, and enhanced child development (Nurse-Family Partnership, 2011c, 2011j). Specifically for the Hispanic/Latino adolescents

enrolled in the NFP, the increased levels of social support as evidenced by this study may directly contribute to these pre-determined NFP goals and decrease the cyclic nature of poverty and pregnancy.

The majority of research that claims to measure decision-making behaviors in adolescents actually measures behavior outcomes or risks such as sexual initiation or contraception usage rather than the decision-making process. There is often discrepancy with conceptual definitions of other terms used in decision-making research such as self-regulation and vulnerability. Research using cross-sectional or cohort designs from larger databases creates the problems of difficulty of establishing causal relationships, although these databases provide time and resource efficient solutions to data collection processes (Hulley, Cummings, Browner, Grady, & Newman, 2007). This research contributed to the literature by examining a small subset of the adolescent population and by examining decision-making in a broad context rather than focusing one specific risky behavior although this study was a static measure of decision-making versus a measure of the process of decision-making behaviors.

The decision-making process is critical to establishing how adolescents pattern decision-making behaviors so interventional strategies can be targeted successfully, and dollars spent toward programs can be utilized effectively and efficiently. In addition, much of adolescent decision-making research has evaluated risk perceptions and competence within the contexts of developmental theories. This research study was guided by Norbeck's Model of Social Support (1981), which allowed decision-making behaviors to be viewed with an alternate lens.

The utilization and psychometric evaluation of the ADMQ, NSSQ, ESI, and ADQ within this study provide additional innovative knowledge to the nursing discipline regarding the use of the instruments within this specific subset of the population. Based on the pilot study, adaptations were needed to use the NSSQ in the population of adolescents to define the term confide, which was not well understood by the participants in the study. After implementing the change regarding the definition of confide on the NSSQ, participants in the study ($n = 38$) had no difficulty completing the NSSQ.

The Cronbach's alpha coefficients for the instruments also supported further use of these instruments within future research, both for nursing and other disciplines. Caution should be noted when interpreting the results for the ADMQ due to several low Cronbach's alpha coefficient scores (<0.60). Because the Cronbach's alpha coefficient for the self-esteem subscale was less than the vigilant and maladaptive decision-making behaviors, it may indicate that adolescents have a more difficult time in reporting self-esteem measures in comparison to other decision-making behaviors. All instruments were administered face-to-face. No participants within the pilot study indicated that changes were needed for the ADMQ, ESI, or ADQ. However, during the study ($n = 38$), several of the participants mentioned during the interview that the ADMQ had excessively small font and that the layout of the questions and Likert scale boxes were not conducive to completion of the instrument appropriately. Several of the participants expressed difficulty with accurate completion of the ADMQ, stating that the items and associated boxes were challenging to match appropriately. It is indicated that future use

of the tool would benefit from an alteration in the visual readability of the ADMQ and clarity in the layout.

Limitations

Limitations of the study were related to the design and sampling which included convenience sampling of participants. Limitations of convenience sampling included that the accessible population might not be representative of the theoretical population. Descriptive statistics were used to compare the target population to the NFP and US populations at large. Random assignment for adolescent mothers enrolled in the NFP could not be logistically manipulated within the parameters of this study. Using a systematic random sample would have strengthened the research by diminishing the threat to internal validity through random selection of participants through a sampling frame (Gliner & Morgan, 2009). Due to the removal of adolescents who were pregnant and adolescent mothers less than six months post-partum, systematic random sampling was not a feasible sampling method to achieve an adequate sample size.

Two study limitations include the narrow generalizability of the results and the limited geographical representation of adolescents included in the study. The first limitation was that the results are not generalizable to adolescents who are not parenting or those who live outside of NC. Secondly, the results are not generalizable to participants enrolled in the NFP who are not between the ages of 13 and 18. Moreover, the adolescents in the study are all low-income first-time mothers, which further decreased the generalizability of the findings.

Additionally, while it was assumed that adolescents answered the surveys honestly and accurately, the results cannot be verified. Self-report measures are associated with concerns of validity when measuring subjective, personalized reports rather than objective measurable data. Similarly, participants completed the surveys in the presence of the interviewer; therefore, results may have been influenced due to the adolescents' social desirability to answer the questions in a way that they felt would be more socially acceptable.

The PI offered all participants the opportunity to have the surveys read aloud to reduce embarrassment or discomfort related to literacy issues. In the sample, only two participants (5%) asked to have some or all of the surveys read aloud. Both of the participants asked that the PI mark the responses on the instruments for them. It is possible that responding aloud to the PI versus private responses may have increased the risk of socially desirable answers on the instruments which may not accurately reflect the true nature of the responses for these participants.

Likewise, adolescent mothers may have been distracted during the process by their environment, such as their child or the presence of family members, and therefore it may have affected the results of the research. In an effort to prevent environmental distractions, meetings were scheduled around the infants' sleeping habits or when family support was available for childcare when possible. It was also encouraged for survey sessions to take place during the adolescents' scheduled visits to the NFP office when children or other family members may not have been present, although none of the participants chose to complete the surveys at the NFP office. In addition, if family

members were present during the survey, the PI would encourage the surveys to be completed in a private setting. No family members other than the adolescent's child were present for the interviews that were read aloud to the adolescent. Every effort was made to arrange scheduled visits at the most suitable time for the mother to reduce distractions.

Decision-making is multifactorial with multiple environmental factors that could not logistically be controlled in the study. Moreover, adolescents had varying levels of developmental maturity and some adolescents may have not been able to think conceptually to adequately analyze their actions related to decision-making. In some of the modeling, age was accounted for, which may have crudely accounted for some of the variance, although age and developmental maturity are often not synonymous.

Besides developmental levels, adolescents are by nature mercurial and an individual interview on one day may not be necessarily representative of adolescents' decision-making patterns of behavior. Also, social support may vacillate, with fluctuations of social support persons changing periodically. Therefore, an individual interview may not be representative of the adolescents' social support structure over time. One limitation of the social support instrument used in the study was that it measured the nature, structure, and type of social support networks but may not have accurately measured the adequacy of the social support. Additionally, by limiting the sample to English speaking adolescents, the results may be over-inclusive of Hispanics/Latinos or other ethnicities that are more acculturated within the US and not representative of all non-English speaking adolescents restricting the generalizability of the findings. Lower levels of acculturation have been associated with less access to healthcare and utilization

of healthcare services (Ver Ploeg & Perrin, 2004). Future research should examine the structure of decision-making behaviors, social support, and everyday chronic stressors within NFP participants who have decreased acculturation levels within the US society.

Other external factors that may have contributed to the results of the study include: a) the current recession, b) the Iraq/Afghanistan conflict and c) the rising costs of fuel. External factors such the current global and national economic state may have contributed to the way adolescents perceived decision-making behaviors, social support, and chronic everyday stressors. All of the participants were of a lower socio-economic status and therefore they may not have had the resources put aside prior to times like recessions. Stressors such as transportation and monetary support may be perceived higher than in previous times of prosperous global and national economic states.

In addition, the Iraq/Afghanistan conflict may have contributed to the results of the study. During the high school years, recruiting from military sources is high with incentives for students such as scholarships and college tuition reimbursements (US Army, n.d.). This increase in recruitment is due to the need for young fit males and females to enter these essential roles. However, despite the need for more military personnel, this recruitment places the parenting adolescent mothers at higher risk for loss of social support. The probability that the parenting adolescent has friends, family, or even the father of the baby in the military stationed away from the adolescent or potentially oversees is high, increasing the risk for loss of social support and the decrease of emotional support, aid, or function for the adolescent. This loss was not assessed in this study.

Lastly, the 2010 Gulf of Mexico oil spill in conjunction with the Iraq/Afghanistan conflict and the imminent threat of war with Iran have contributed to an elevation in prices for fuel and other resources. This increase in price may have contributed to the perceptions of the participants in the study related to decision-making, social support, and chronic everyday stressors. Specifically, the increase in price of gasoline may contribute to increased stressors related to transportation, when transportation was already an issue for this population prior to these events. With decreased transportation, there is a greater risk that this population will have less access to healthcare and healthcare services reinforcing the need for in-home health programs such as the NFP. Additionally, the rising cost of gasoline makes programs such as the NFP more costly.

Summary

Early intervention, optimally prior to pregnancy, is important to prevent substandard health outcomes. Understanding how decision-making occurs in this population is an initial step in prevention of adolescent pregnancy. Thus, prevention programs can be tailored to meet the decision-making needs of this population. While current health promotion programs have demonstrated positive outcomes, the number of programs does not meet the needs of the growing number of adolescent mothers. By combining current health promotion programs and early prevention programs tailored to decision-making influences and behaviors in adolescents, the number of adolescent pregnancies may begin to decrease. With decreased rates of adolescent pregnancy, there may be a reduction of health disparities and improved outcomes for adolescents.

In the study, the PI addressed methodological gaps in adolescent decision-making research by including the outcome of general adolescent decision-making subdivided into positive and negative outcomes. The use of the ADMQ allowed for specific insight into types of decision-making for this population. Additionally, the PI enhanced the validity of the results by using real world situations as suggested by other researchers in the field of decision-making behaviors (Millstein & Halpern-Felsher, 2002; Steinberg, 2004). For example, the adolescents in this study were facing decisions regarding their current situation, which includes parenting of a child or other decisions within their reality. In response to Fischhoff's (2008) identified methodologies for decision-making research, the study offered the science the beginning steps toward the identification of the impacts of decision-making in parenting adolescents, a description of how parenting adolescents enrolled in the NFP view decision-making behaviors and an assessment of the effect of the adolescents' perceived social support of the nurse home visitor on decision-making behaviors, both positive and negative.

This quantitative cross sectional study has identified that the grade level completed for parenting adolescents enrolled in the NFP is a factor that affects self-esteem within the decision-making capacity. Additionally, this study identified that parenting Hispanic/Latino adolescents enrolled in the NFP have significantly less overall social support aid than parenting White adolescents enrolled in the same program. For those parenting adolescents, Hispanics/Latinos had significantly more emotional social support and total function social support from the nurse home visitors when compared to White adolescents in the study.

All participants in the study were low-income female adolescents enrolled in the NFP program. These adolescents were parents of children between the ages of six months and two years, while the adolescents themselves were between the ages of 13 and 18; all participants completed four survey instruments: ADMQ, NSSQ, ESI, and the ADQ. Norbeck's Model of Social Support provided an appropriate lens for studying this phenomenon and the instruments utilized in this study were appropriate measures of the concepts within the guiding framework. It is recommended that these instruments are used in future research that investigates decision-making behaviors, social support, and everyday chronic stressors for this population or similar groups.

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APPENDIX A

ADOLESCENT DECISION MAKING QUESTIONNAIRE

Adolescent
Decision Making Questionnaire

Instructions: People differ in the way they feel and go about making decisions. Please indicate how you normally make decisions by ticking (✓) the box which best describes your way of doing things for each question.

	Not at all true for me	Some- times true	Often true	Almo always true
1. I feel confident about my ability to make decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I am not as good as most people in making decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I think that I am a good decision maker.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I feel so discouraged that I give up trying to make decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The decisions I make turn out well.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. It is easy for other people to convince me that their decision rather than mine is the correct one.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I avoid making decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I take a lot of care before I make my choice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I put off making decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. When faced with a decision, I go along with what others suggest.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I panic if I have to make decisions quickly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I'd rather let someone else make a decision for me so that it won't be my problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Once I have made a decision then I don't change my mind.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I prefer to leave decisions to others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Whenever I get upset by having to make a decision, I choose on the spur of the moment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I like to think about a decision before I make it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. When I have to make a decision, I wait a long time before starting to think about it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I feel as if I'm under tremendous time pressure when making decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I can't think straight if I have to make a decision in a hurry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. When I make a decision, I feel that I've made the best one possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I put little effort into making decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. The possibility that some small thing might go wrong causes me to immediately change my mind about what I'm going to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I like to make decisions myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. When I'm forced to make a decision, I couldn't care which way I choose.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. I choose on the basis of some small thing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. I tend to drift into decisions without thinking about them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. When I decide to do something, I get right on with it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. I don't like to take responsibility for making decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. When making decisions I tend to choose the first alternative that comes to mind.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. I prefer to do what others choose because I don't like to be different.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Please see next page for conformation of permission to use instrument.)

Permission to use the Adolescent Decision Making Questionnaire was obtained via e-mail from the instrument's creator and copyright holder, Leon Mann. Please see the copy of the e-mail correspondence below.

From: **Leon Mann** <leonm@unimelb.edu.au>
 Date: Mon, Nov 10, 2008 at 1:35 AM
 Subject: Re: Adolescent Decision Making Questionnaire
 To: Susan Lane <shlane@uncg.edu>

Dear Susan,

Attached is an electronic version of the ADMQ.
 You may use it with my compliments.

I'd be interested to hear about your study and what aspects of adolescent decision making you will be researching.

You might know of the work of Prof Patricia Hollen School of Nursing at UVA who is using my decision making model in studies of cancer patients and their decision making.

good wishes

Leon Mann

> Dr. Mann:
 > I am a Nursing Doctoral student at the University of North Carolina at
 > Greensboro and I am interested in utilizing the Flinders Adolescent
 > Decision
 > Making Questionnaire in my research. I have reviewed the wide use of this
 > tool in the literature through multiple populations and settings, but have
 > been unable to locate access to the tool. Would it be possible to use
 > this
 > tool, and if so, is there a cost involved? What is the best process to
 > attain the tool?
 > Thank you for your time and assistance.
 > Sincerely:
 > Susan H. Lane RN, MSN
 > [704-313-3097](tel:704-313-3097)
 >

APPENDIX B

NORBECK’S SOCIAL SUPPORT QUESTIONNAIRE

SOCIAL SUPPORT QUESTIONNAIRE

PLEASE READ ALL DIRECTIONS
ON THIS PAGE BEFORE STARTING

Please list each significant person in your life on the right. Consider all the persons who provide personal support for you or who are important to you.

Use only first names or initials, and then indicate the relationship, as in the following example:

Example:		
	First Name or Initials	Relationship
1.	<u>Mary T</u>	<u>friend</u>
2.	<u>Bob</u>	<u>brother</u>
3.	<u>M T</u>	<u>mother</u>
4.	<u>Sam</u>	<u>friend</u>
5.	<u>Mrs. R.</u>	<u>neighbor</u>
	etc.	

Use the following list to help you think of the people important to you, and list as many people as apply in your case.

- spouse or partner
- family members or relatives
- friends
- work or school associates
- neighbors
- health care providers
- counselor or therapist
- minister/priest/rabbi
- other

You do not have to use all 24 spaces. Use as many spaces as you have important persons in your life.

WHEN YOU HAVE FINISHED YOUR LIST, PLEASE TURN TO PAGE 2.

Note: Before use, pages 1-4 should be cut along the dashed center line to allow the response lines for Questions 1-6 to align with the Personal Network list on page 5.

For each person you listed, please answer the following questions by writing in the number that applies.

- 0 = not at all
- 1 = a little
- 2 = moderately
- 3 = quite a bit
- 4 = a great deal

Question 1:

How much does this person make you feel liked or loved?

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

[EMO1]

Question 2:

How much does this person make you feel respected or admired?

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

[EMO2]

Note: Before use, pages 1-4 should be cut along the dashed center line to allow the response lines for Questions 1-6 to align with the Personal Network list on page 5.

0 = not at all
1 = a little
2 = moderately
3 = quite a bit
4 = a great deal

Question 3:

How much can you confide in this person?

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____
- 11. _____
- 12. _____
- 13. _____
- 14. _____
- 15. _____
- 16. _____
- 17. _____
- 18. _____
- 19. _____
- 20. _____
- 21. _____
- 22. _____
- 23. _____
- 24. _____

[EMO3]

Question 4:

How much does this person agree with or support your actions or thoughts?

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____
- 11. _____
- 12. _____
- 13. _____
- 14. _____
- 15. _____
- 16. _____
- 17. _____
- 18. _____
- 19. _____
- 20. _____
- 21. _____
- 22. _____
- 23. _____
- 24. _____

[EMO4]

Note: Before use, pages 1-4 should be cut along the dashed center line to allow the response lines for Questions 1-6 to align with the Personal Network list on page 5.

0 = not at all
1 = a little
2 = moderately
3 = quite a bit
4 = a great deal

Question 5:

If you needed to borrow \$10, a ride to the doctor, or some other immediate help, how much could this person usually help?

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____
- 11. _____
- 12. _____
- 13. _____
- 14. _____
- 15. _____
- 16. _____
- 17. _____
- 18. _____
- 19. _____
- 20. _____
- 21. _____
- 22. _____
- 23. _____
- 24. _____

[AID5]

Question 6:

If you were confined to bed for several weeks, how much could this person help you?

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____
- 11. _____
- 12. _____
- 13. _____
- 14. _____
- 15. _____
- 16. _____
- 17. _____
- 18. _____
- 19. _____
- 20. _____
- 21. _____
- 22. _____
- 23. _____
- 24. _____

[AID6]

Note: Before use, pages 1-4 should be cut along the dashed center line to allow the response lines for Questions 1-6 to align with the Personal Network list on page 5.

Number _____

[IDNO]

Date _____

Question 7:

How long have you known
this person?

- 1 = less than 6 months
 2 = 6 to 12 months
 3 = 1 to 2 years
 4 = 2 to 5 years
 5 = more than 5 years

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[DURATION]

Question 8:

How frequently do you
usually have contact with this
person? (Phone calls, visits,
or letters)

- 5 = daily
 4 = weekly
 3 = monthly
 2 = a few times a year
 1 = once a year or less

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[FREQCON]

PERSONAL NETWORK

First Name or Initials

Relationship

- | | | |
|-----------|-------|---------|
| 1. _____ | _____ | [SOU1] |
| 2. _____ | _____ | [SOU2] |
| 3. _____ | _____ | [SOU3] |
| 4. _____ | _____ | [SOU4] |
| 5. _____ | _____ | [SOU5] |
| 6. _____ | _____ | [SOU6] |
| 7. _____ | _____ | [SOU7] |
| 8. _____ | _____ | [SOU8] |
| 9. _____ | _____ | [SOU9] |
| 10. _____ | _____ | [SOU10] |
| 11. _____ | _____ | [SOU11] |
| 12. _____ | _____ | [SOU12] |
| 13. _____ | _____ | [SOU13] |
| 14. _____ | _____ | [SOU14] |
| 15. _____ | _____ | [SOU15] |
| 16. _____ | _____ | [SOU16] |
| 17. _____ | _____ | [SOU17] |
| 18. _____ | _____ | [SOU18] |
| 19. _____ | _____ | [SOU19] |
| 20. _____ | _____ | [SOU20] |
| 21. _____ | _____ | [SOU21] |
| 22. _____ | _____ | [SOU22] |
| 23. _____ | _____ | [SOU23] |
| 24. _____ | _____ | [SOU24] |

PLEASE BE SURE YOU HAVE RATED EACH PERSON ON
 EVERY QUESTION. GO ON TO THE LAST PAGE.

9. During the past year, have you lost any important relationships due to moving, a job change, divorce or separation, death, or some other reason?

_____ 0. No
 _____ 1. Yes

[LOSS]

IF YOU LOST IMPORTANT RELATIONSHIPS DURING THIS PAST YEAR:

- 9a. Please indicate the number of persons from each category who are *no longer available* to you.

_____ spouse or partner	[LOSS1]
_____ family members or relatives	[LOSS2]
_____ friends	[LOSS3]
_____ work or school associates	[LOSS4]
_____ neighbors	[LOSS5]
_____ health care providers	[LOSS6]
_____ counselor or therapist	[LOSS7]
_____ minister/priest/rabbi	[LOSS8]
_____ other (specify) _____	[LOSS9]
	[LOSSNO]

- 9b. Overall, how much of your support was provided by these people who are no longer available to you?

[LOSSAMT]

_____ 0. none at all
 _____ 1. a little
 _____ 2. a moderate amount
 _____ 3. quite a bit
 _____ 4. a great deal

(Please see next page for conformation of permission to use instrument.)

Permission to use Norbeck's Social Support Questionnaire is granted freely via the faculty profile web page of the instrument's creator and copyright holder, Jane S. Norbeck: <http://nurseweb.ucsf.edu/www/ffnorb.htm>. Please see the screen shots of the web page below. The screen shots reflect the web page as it stood as of July 28, 2012.

7/28/12
Jane Norbeck, Faculty Profile - UCSF School of Nursing - University of California, San Francisco - nurs...


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Faculty Profile

Jane S. Norbeck, RN, DNSc, FAAN

Professor and Dean Emerita
Dept. of Community Health Systems
UCSF School of Nursing, Box 0608
2 Koret Way, #N-511E
San Francisco, CA 94143-0608

Dr. Norbeck served as Dean, School of Nursing, from 1989 through 2000.



Access to Research Instruments (NSSQ)

A copy of the instrument, scoring instructions, and all other information available for the instruments developed by Dr. Norbeck is available in downloadable files at no cost (see below). *These materials are no longer provided via mail.* A statement of permission to use these instruments is included with the scoring instructions for each instrument.

Norbeck Social Support Questionnaire (NSSQ, 1995 version)

Entire NSSQ file package, PK-Zip/WinZip format
[nssq.zip](#)

Background information
[NSSQ-Background.pdf](#)

The NSSQ Instrument
[NSSQ-Instrument.pdf](#)

Spanish Version of Instrument
[NSSQ-spanishinst.pdf](#)

Summary of Psychometric Data
[NSSQ-Psychometric.pdf](#)

Scoring instructions
[NSSQ-Scoring.pdf](#)

SPSS coding statements *(from scoring instructions in plain text format)*
[NSSQ95a.sps](#), [NSSQ95b.sps](#)
[NSSQafix.sps](#) *(for pre-1995 version only)*

Life Events Questionnaire (LEQ)

Instrument, scoring instructions
[LifeEventsQues.pdf](#)


Education

University of Minnesota; BA Psychology; BSN Nursing
University of California, San Francisco; MS Psychiatric Nursing
University of California, San Francisco; DNSc Nursing Science

Honors and Awards

Phi Beta Kappa (1965)
Distinguished Teaching Award, UCSF Academic Senate (1983)
Elected to the American Academy of Nursing (1984)
Eighth Helen Nahm Research Lecturer, UCSF School of Nursing (1988)

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nurseweb.ucsf.edu/www/ffnorb.htm
1/2

7/28/12 Jane Norbeck, Faculty Profile - UCSF School of Nursing - University of California, San Francisco - nurs...

Elected to Institute of Medicine of the National Academy of Sciences (1994)
 Lifetime Achievement Award, Assoc. of Child and Adolescent
 Psychiatric Nurses (1996)
 Fourth Annual Award for Leadership in Promoting Diversity and Advancing
 Social Justice, Council of Minority Organizations at UCSF (1997)
 Honorary Life Member of the National Association of Hispanic Nurses (1999)
 Identified in *Highly Cited in the Social Sciences* (2002)

Publications

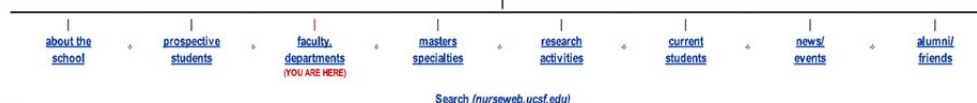
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[UCSF School of Nursing](#)



Revised: June 2003

Contact: info@nursing.ucsf.edu · © Copyright 2003 University of California Regents, All Rights Reserved.

APPENDIX C

EVERYDAY STRESSORS INDEX

Participant Number |

ESI 1--20

I'm going to ask you some questions about common problems which many people have every day. Please tell me how much the following problems worry, upset, or bother you from day-to-day.

You may answer the questions with the following: Are you not at all bothered, a little bothered, somewhat bothered, or bothered a great deal by the following things:

	1 = Not at all bothered 2 = A little bothered 3 = Somewhat bothered 4 = Bothered a great deal			
1. Having too many responsibilities.	1	2	3	4
2. Taking care of family members other than your child(ren).	1	2	3	4
3. Owing money or getting credit.	1	2	3	4
4. Problems with your child(ren)'s behavior.	1	2	3	4
5. Not enough money for basic necessities, such as clothing, housing, food, and health care.	1	2	3	4
6. Not enough time to do the things you want to do.	1	2	3	4
7. Problems with transportation.	1	2	3	4
8. Problems with your job/with not having a job.	1	2	3	4
9. Disagreements with others over discipline of your child(ren).	1	2	3	4
10. Problems with housing.	1	2	3	4
11. Concerns about the health of a family member [not including your child(ren)].	1	2	3	4
12. Concerns about how your child(ren) is(are) doing in school (day care).	1	2	3	4
13. Problems with friends and neighbors.	1	2	3	4
14. Concerns about your child(ren)'s health.	1	2	3	4
15. Problem getting along with your family.	1	2	3	4
16. Problems with being married/single.	1	2	3	4
17. Feeling safe in your neighborhood.	1	2	3	4
18. Difficulties with your child(ren)'s father.	1	2	3	4
19. Problems holding a job.	1	2	3	4
20. Trouble finding employment.	1	2	3	4

(Please see next page for conformation of permission to use instrument.)

Permission to use the Everyday Stressors Index was obtained via e-mail from the instrument's creator and copyright holder, Lynne A. Hall. Please see the copy of the e-mail correspondence below.

----- Forwarded message -----

From: **Hall, Lynne A** <Lynne.Hall@uky.edu>

Date: Thu, Feb 19, 2009 at 11:29 AM

Subject: Everyday Stressors Index

To: "shlane@uncg.edu" <shlane@uncg.edu>

Susan—it was a pleasure to meet you. Here is the Everyday Stressors Index. I hope it is useful to you in your research. Best wishes and see you at a future SNRS meeting! Lynne

APPENDIX D

ADOLESCENT DEMOGRAPHIC QUESTIONNAIRE

Participant Number

Adolescent Demographic Tool**Today's Date** _____

1. What is your date of birth? _____
2. What is your current living situation?
☐ Rent or ☐ Own your home
☐ Live with parents
☐ Live with other family
☐ Live with friends
☐ Live with a boyfriend/girlfriend
☐ Live alone
3. If you are less than 18 years of age, have you received emancipation status?
☐ Yes
☐ No
4. If the answer is no, please list your parents' or legal guardian's name and contact information.
 Name: _____
 Address: _____
 Telephone Number: _____
 Email: _____
5. Do you have any of the following?
☐ Depression Diagnosed By A Medical Professional
☐ Schizophrenia
☐ Suicidal Thoughts
☐ Other Mental Health Illnesses
6. Check the one answer that best describes you.
☐ Asian/Pacific Islander
☐ White/Non-Hispanic
☐ Black
☐ American Indian
☐ Hispanic/Latino
☐ Other/Mixed
7. What is your marital status? (check the one best answer)
☐ Never married
☐ Divorced/Separated
☐ Married
☐ Widowed

Participant Number |

8. Are you currently in school?

- ☐ No
☐ Yes

9. Is your school private or public?

- ☐ Private or ☐ Public

10. What is the highest level of school you have completed?

- ☐ Less than 7th grade
☐ 7th grade
☐ 8th grade
☐ 9th grade
☐ 10th grade
☐ 11th grade
☐ 12th grade
☐ Any college courses

11. Are you currently employed?

- ☐ No
☐ Yes

12. How many hours do you work per week? _____

13. How many children do you have? _____

14. Is this your first baby?

- ☐ No
☐ Yes

15. Is this your first pregnancy?

- ☐ No
☐ Yes

16. Are you currently in the Nurse Family Partnership?

- ☐ No
☐ Yes

17. How old is your baby? _____

18. Please check which best describes you.

- ☐ Pregnant or ☐ Parenting

19. Would you like to be contacted in the future if more research is being done?

- ☐ Yes
☐ No

If yes, please write down your name, phone number, and address below.

APPENDIX E

INSTITUTIONAL REVIEW BOARD APPROVAL FOR THE PILOT STUDY



THE UNIVERSITY of NORTH CAROLINA
GREENSBORO

OFFICE OF RESEARCH COMPLIANCE
2718 Beverly Cooper Moore and Irene Mitchell Moore
Humanities and Research Administration Bldg.
PO Box 26170
Greensboro, NC 27402-6170
336.256.1482
Web site: www.uncg.edu/orc
Federalwide Assurance (FWA) #216

To: Eileen Kohlenberg
Adult Health
213 Moore Building

From: UNCG IRB

Authorized signature on behalf of IRB

Approval Date: 3/16/2010
Expiration Date of Approval: 3/15/2011

RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Submission Type: Initial
Expedited Category: 7. Surveys/interviews/focus groups
Study #: 10-0104

Study Title: Pilot Study: Decision Making Behaviors for Adolescents Who Are Pregnant and Adolescent Mothers

This submission has been approved by the IRB for the period indicated. It has been determined that the risk involved in this research is no more than minimal.

Study Description:

This pilot study will evaluate the effectiveness of the tools and the data collection process proposed for a larger study evaluating decision making for pregnant and parenting adolescents.

Investigator's Responsibilities

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

When applicable, enclosed are stamped copies of approved consent documents and other recruitment materials. You must copy the stamped consent forms for use with subjects unless you have approval to do otherwise.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented (use the modification application available at <http://www.uncg.edu/orc/irb.htm>). Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB using the "Unanticipated Problem/Event" form at the same website.

CC: Susan Lane, School Of Nursing

APPENDIX F

ADOLESCENT RECRUITMENT LETTER



THE UNIVERSITY of NORTH CAROLINA
GREENSBORO

Susan Lane
103 Lyman Street
Shelby, North Carolina 28152
(704) 692-1689

January 1, 2011

Dear Adolescent:

I am a nursing student at The University of North Carolina at Greensboro (UNC-G). I am completing a research study titled *Decision Making Behaviors for Adolescent Mothers*. Dr. Eileen Kohlenberg from the School of Nursing at UNC-G will be working with me on the project. I am writing to ask you if you would like to be in this study. The study will help us to learn more about teenagers and decision-making. In the study, we will use surveys to learn about your decision-making, your environment, and people in your life that support you.

If you want to be in the study, you will need to contact me (the researcher), at shlane@uncg.edu or (704) 692-1689. Your parent(s) or legal guardian will need to sign a consent form for you if you are less than 18 years old. If you have received emancipation from North Carolina or are 18 years old, you may sign for consent. The consent forms are included in this packet. You are able to be in the study if you are a female and this is your first baby. You must be between 13 to 18 years old. You must also get help from the Nurse Family Partnership. If you choose to be in the study, you will be asked to complete surveys at a place near to you. It will take about 30 minutes.

You do not have to say "yes", if you do not want to do this. We will not punish you if you say "no". Even if you say "yes" now and change your mind after you start the study, you can stop. No one will be mad at you. The help that you get from the Nurse Family Partnership or other agencies will not change based on any decision you make.

There is very little risk or harm involved in this study. You may have anxiety or stress related to the survey questions. This risk is no more risk than everyday life. By being in the study, you may learn about decision-making, your environment, and people who support you.

This will not cost you or your parent(s) any money. You will receive a \$20 Wal-Mart gift card to thank you for your time. If you would like to be in the study, would like more information, or have any questions, please contact me:

Susan H. Lane RN, MSN	(704) 692-1689	shlane@uncg.edu
(Researcher Name)	Phone Number	E-mail address

Thank you for considering being in this study. I look forward to talking with you.

Sincerely:

Susan H. Lane, Registered Nurse

APPROVED IRB
FEB 25 2011

APPENDIX G

PARENT RECRUITMENT LETTER



THE UNIVERSITY of NORTH CAROLINA
GREENSBORO

Susan Lane
103 Lyman Street
Shelby, North Carolina 28152
(704) 692-1689

January 1, 2011

Dear Parent:

I am a nursing doctoral student at The University of North Carolina at Greensboro (UNC-G). I am completing a research study titled *Decision Making Behaviors for Adolescent Mothers*. Dr. Eileen Kohlenberg from the School of Nursing at UNC-G will be assisting me on the project. I am writing to ask you if you would like your child to be in this study. This study will help us to learn more about teenagers and decision-making. In the study, we will use surveys to learn more about your child's decision-making, environment, and the support people in your child's life.

If you want your child to be in the study, you child will need to contact me (the researcher), at shlane@uncg.edu or (704) 692-1689. As the parent(s) or legal guardian(s), you will need to sign the consent form if your child is less than 18 years old and does not have emancipation status in North Carolina. The consent forms are included in this packet. Your child is able to be in the study if she is a female and this is her first baby. She must be between 13 to 18 years old. She must also get help from the Nurse Family Partnership. If you decide that she can be in the study, she will be asked to complete surveys at a place near to her. It will take about 30 minutes.

You do not have to say "yes", if you do not want your child to do this. We will not punish you or her if you say "no". Even if you say "yes" now and change your mind after your child starts the study, you can stop. No one will be mad at you or her. The help that she gets from the Nurse Family Partnership or other agencies will not change based on any decision you make.

There is very little risk or harm involved in this study. Your child may have anxiety or stress related to the survey questions. This risk is no more risk than everyday life. By being in the study your child may learn about her decision-making, environment, and support.

This will not cost you or your child any money. To thank her for her time, your child will receive a \$20 Wal-Mart gift card. If you would like your child to be in the study, need more information, or have questions, please contact me:

Susan H. Lane RN, MSN	(704) 692-1689	shlane@uncg.edu
(Researcher Name)	Phone Number	E-mail address

Thank you for your consideration. I look forward to talking with you.

Sincerely:

Susan H. Lane, Registered Nurse

APPROVED IRB
FEB 25 2011

APPENDIX H

RECRUITMENT FLYER



Looking For...

First Time

Mothers Between

The Ages

13 – 18 years

If you are interested in participating or would simply like more information, please contact:

**Susan Lane, Registered Nurse
PhD Student at UNCG
704-313-3097
or 704-692-1689
shlane@uncg.edu**

The purpose of this research is to explore decision-making behaviors, stressors, and social support for teenage mothers. In this study, we will learn about decision-making, stressors, and social support using surveys.

Study participants will be asked to meet with the researcher for one face-to-face meeting at a time and place most convenient for you. Meetings and interviews are expected to last approximately 30 minutes. Your name and identifying information will be kept confidential. If you choose to participate you will receive a \$20 gift card from Walmart after the surveys are completed in appreciation of your time.

APPENDIX I

CONSENT FORM FOR EMANCIPATED MINORS AND
PARTICIPANTS WHO ARE 18 YEARS OF AGE



THE UNIVERSITY of NORTH CAROLINA
GREENSBORO

CONSENT TO ACT AS A HUMAN PARTICIPANT: LONG FORM

Project Title: **Decision Making Behaviors For Adolescent Mothers**

Project Director: **Eileen Kohlenberg PhD, RN, NEA-BC (PI)**
Susan H. Lane RN, MSN (Doctoral Student)

Participant's Name: _____

What is the study about?

This is a research study about decision-making, environment, and people who support you. We hope to learn about the way teenagers make decisions.

Why are you asking me?

Health for teenage moms is sometimes not good. We need to improve the health of moms and their babies. This study will look at ways first time moms who speak English between the ages of 13 and 18 make decisions. We would like you to take part in this study because you a teenage mom with a child between the ages of six months and two years. You are also part of the Nurse Family Partnership program.

What will you ask me to do if I agree to be in the study?

You will be asked to complete three surveys that will take about 30 minutes. These surveys will ask you questions about decision-making, environment, and support. You will also complete one form with information about you.

What are the dangers to me?

There is little to no risk to be in the study. You may feel anxiety or stress. These risks are no more than everyday life. You will have the contact information for the researchers if you feel anxiety or stress. If you request it or if a researcher feels you need it, the researchers will refer you to your primary health care provider, social worker, or a therapist.

If you have any concerns about your rights or about how you are being treated, please contact Eric Allen in the Office of Research Compliance at UNCG at (336) 256-1482. Mr. Allen can also be contacted if you have questions, suggestions, or want more information. Questions can be answered by Susan Lane. Ms. Lane may be contacted at (704) 692-1689 (shlane@uncg.edu).

Are there any benefits to me for taking part in this research study? Are there any benefits to society because of me taking part in this research?

You may learn about your decision-making, environment, and support. The study may help other teenagers in the future. The findings may tell us about teenagers' decision-making. The information may be useful in creating programs that help teenagers. We hope to improve teenagers' health.

Will I get paid for being in the study? Will it cost me anything?

UNCG IRB
Approved Consent Form

Valid 2/25/11 to 2/24/12

There are no costs or payments to you for being in this study. To thank you for your time, you will receive a \$20 Wal-mart gift card at the end of the surveys. To receive the gift card, you must complete 75% of the survey items. You can ask questions at any time. You can talk to me or you can talk to someone else at any time during the study. Here are the telephone numbers to call us:

Dr. Eileen Kohlenberg (Principle Investigator Name)	(336) 334-5261 Phone Number	Eileen_kohlenberg@uncg.edu E-mail address
Susan H. Lane RN, MSN (Researcher Name)	(704) 692-1689 Phone Number	shlane@uncg.edu E-mail address

How will you keep my information confidential?

Information will be kept in a locked cabinet. Computer data will be password and firewall protected. Surveys will not include your name. At the end of the study, the findings will be written in a report. A copy of the report can be given to you. Your name will not appear in the study. All information gathered in this study is strictly confidential unless disclosure is required by law. If you report abuse to yourself or to your child, the researcher has a legal duty to report this to the police.

What if I want to leave the study?

You have the right to choose not to be in the study. You may stop (or withdraw) at any time, without penalty. If you do withdraw, it will not affect you in any way. If you choose to pull out from the study, you may ask that any of your data that can identify you be destroyed.

What about new information/changes in the study?

If important new information about the study that may affect your choice to be in the study becomes available, this information will be provided to you.

Voluntary Consent by Participant:

By signing this consent form, you are agreeing that you have read it or that it has been read to you. You fully understand the contents of this document. You are openly willing to consent to take part in this study. All of your questions concerning this study have been answered. By signing this form, you are agreeing that you are 18 years of age or emancipated. You are agreeing to participate in this study described to you by Susan Lane.

Signature: _____ Date: _____

I am 18 years of age.

☐ Yes ☐ No

or

I have emancipation status and have shown the legal document from North Carolina to Susan prior to the study.

☐ Yes ☐ No

(Flesch- Kincaid Grade Level – 6.6/5.8)

UNCG IRB
Approved Consent Form
Valid 2/25/11 to 2/28/12

APPENDIX J

PARENTAL CONSENT FORM



THE UNIVERSITY of NORTH CAROLINA
GREENSBORO

CONSENT FOR A MINOR TO ACT AS A HUMAN PARTICIPANT: LONG FORM

Project Title: **Decision Making Behaviors For Adolescent Mothers**

Project Director: **Eileen Kohlenberg PhD, RN, NEA-BC (PI)**
Susan H. Lane RN, MSN (Doctoral Student)

Participant's Name: _____

What is the study about?

This is a research study. Your child is being asked to be in a study about decision-making, environment, and people who support them. We hope to describe the way teenagers make decisions. We also hope to describe the way the environment and support impact decisions.

Why are you asking my child?

Health for teenage moms is sometimes not good. We need to improve the health of teenage moms and their babies. This study will look at ways first time moms make decisions. Your child must be between 13 and 18 years old. We would like your child to take part in this study because she is an English speaking teenage mom with a child between the ages of six months and two years. She is also part of the Nurse Family Partnership program.

What will you ask my child to do if I agree to let her be in the study?

Your child will be asked to fill out three surveys that will take about 30 minutes. These surveys will ask questions about decision-making, environment, and support. Your child will also complete one form with personal information.

What are the dangers to my child?

There is little to no risk to be in the study. Your child might have anxiety or stress. This risk is no more than everyday life. Your child will have the contact information for the researchers if she feels anxiety or stress. If she requests it or if a researcher feels she needs it, the researchers will refer her to her primary health care provider, social worker, or a therapist.

If you have any concerns about your child's rights or about how she is being treated, please contact Eric Allen in the Office of Research Compliance at UNCG at (336) 256-1482. Mr. Allen can also be contacted if you have questions, suggestions, or want more information. Questions can be answered by Susan Lane. Ms. Lane may be contacted at (704) 692-1689 (shlane@uncg.edu).

Are there any benefits to my child as a result of participation in this research study? Are there any benefits to society as a result of my child taking part in this research?

Your child may learn about her decision-making, environment, and people who support her. The findings of this study may give us information about teenagers' decision-making. The information

UNCG IRB
Approved Consent Form

Valid 2/25/11 to 2/24/12

may be useful in creating programs that help teenagers. By doing so, we hope to improve health for teenagers.

Will my child get paid for being in the study? Will it cost me anything for my child to be in this study?

There are no costs to you or your child for being in this study. To thank her for her time, your child will receive a \$20 Walmart gift card at the end of the surveys. She will receive the gift card if she completes 75% of the survey items. You can ask questions at any time. You can talk to me or you can talk to someone else at any time during the study. Here are the telephone numbers to reach us:

Dr. Eileen Kohlenberg (Principle Investigator's Name)	(336) 334-5261 Phone Number	Eileen_kohlenberg@uncg.edu E-mail address
Susan H. Lane RN, MSN (Researcher's Name)	(704) 692-1689 Phone Number	shlane@uncg.edu E-mail address

How will my child's information be kept confidential?

Information will be kept in a locked file cabinet. Computer data will be password and firewall protected. Your child's name will be not be written on the surveys. At the end of the study, the results will be written in a report. A copy of the findings can be given to you and your child. Her name will not appear in the study. All information gathered in this study is confidential unless disclosure is required by law. If your child reports abuse to herself or to her child, the researcher has a legal duty to report this to the police.

What if my child wants to leave the study or I want her to leave the study?

You have the right to choose not to allow your child to participate. You may pull her out of the study at any time without penalty. If your child does withdraw, it will not affect you or your child in any way. If you or your child chooses to pull out of the study, you may ask that any data that can identify your child be destroyed.

What about new information/changes in the study?

If important new information about the study which may change your decision to allow your child to continue to be in the study become available, this information will be given to you.

Voluntary Consent by Participant:

By signing this consent form, you are agreeing that you have read it or it has been read to you. You fully understand the contents of this document. You consent for your child to take part in this study. All of your questions about this study have been answered. By signing this form, you are agreeing that you are the legal parent or guardian of the child who wishes to be part of this study.

☐ **If your child lives with you, please check this box if the researcher may enter your home while your child completes the surveys.**

Participant's Parent/Legal Guardian's Signature
(Flesch-Kincaid Grade Level = 6.6/5.9)

Date: _____

UNCG IRB
Approved Consent Form

Valid 2/25/11 to 2/24/12

APPENDIX K

ADOLESCENT ASSENT FORM



THE UNIVERSITY of NORTH CAROLINA
GREENSBORO

Assent Form

Study Title: **Decision Making Behaviors For Adolescent Mothers**

Investigator(s): **Eileen Kohlenberg PhD, RN, NEA-BC (PI)**
Susan H. Lane RN, MSN (Doctoral Student)

My Name Is: _____

What Is This About?

I would like to talk to you about decision-making, your environment, and people in your life that support you. We are doing a study using surveys to learn about decision-making for teenagers who are parenting. We hope to help nurses learn more about teenagers and decision-making.

Did My Parents Say It Was Okay?

Your parent or legal guardian has said it is okay for you to help us learn about decision-making and has signed a form that is like this one.

Why Me?

We would like you to help us with our study because you are a female and this is your first baby. Your baby is between the ages of 6 months and 2 years. You are between 13 to 18 years old. You also are part of the Nurse Family Partnership program.

What Will I Have to Do?

Complete three surveys and one form that will ask information about you.

What If I Want to Stop?

You do not have to say "yes", if you do not want to do this. We will not punish you if you say "no". Even if you say "yes" now and change your mind after you start the study, you can stop and no one will be mad at you. The help that you get from the Nurse Family Partnership or other agencies will not be changed based on any decision you make related to the study.

UNCG IRB
Approved Consent Form

Valid 2/25/11 to 2/24/12

Will Anything Bad Happen to Me?

There is very little risk or harm involved in this study. You may experience anxiety or stress related to the questions of decision-making, environment, and people in your life that support you, but this risk is no more risk than everyday life. A referral to your primary health care provider, social worker, or a therapist will be provided to you if you appear to need it or if you request the referral.

Will Anything Good Happen to Me?

You may learn about decision-making, your environment, and people who support you which may help you make decisions.

Will I Get Anything for Being in the Study?

This will not cost you or your parent(s) any money. You will a \$20 Walmart gift card for at the end of the surveys in appreciation for your time. You must complete 75% of the survey items to receive the Walmart gift card.

When we are done with the study, we will write a report about what we found out. We will not use your name in the report. Your name or any identifying information about you will not be used in this study. You can ask questions at any time. You can talk to me or you can talk to someone else at any time during the study. Here are the telephone numbers to reach us:

Dr. Eileen Kohlenberg (Principle Investigator Name)	(336) 334-5261 Phone Number	Eileen_kohlenberg@uncg.edu E-mail address
Susan H. Lane RN, MSN (Researcher Name)	(704) 692-1689 Phone Number	shlane@uncg.edu E-mail address

If you want to be in this study, please sign your name.

I, _____, want to be in this research study.
(Print your name here)

(Sign your name here)

(Date)

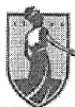
(Flesch-Kincaid Grade Level = 5.9/5.2)

UNCG IRB
Approved Consent Form

Valid 2/25/11 to 2/24/12

APPENDIX L

INSTITUTIONAL REVIEW BOARD APPROVAL



THE UNIVERSITY of NORTH CAROLINA
GREENSBORO

OFFICE OF RESEARCH COMPLIANCE
2718 Beverly Cooper Moore and Irene Mitchell Moore
Humanities and Research Administration Bldg.
PO Box 26170
Greensboro, NC 27402-6170
336.256.1482
Web site: www.uncg.edu/orc
Federalwide Assurance (FWA) #216

To: Eileen Kohlenberg
Adult Health
213 Moore Building

From: UNCG IRB

Authorized signature on behalf of IRB

Approval Date: 2/25/2011

Expiration Date of Approval: 2/24/2012

RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)

Submission Type: Initial

Expedited Category: 7.Surveys/interviews/focus groups

Study #: 11-0156

Study Title: Decision Making Behaviors for Adolescent Mothers Enrolled in the Nurse Family Partnership

This submission has been approved by the IRB for the period indicated. It has been determined that the risk involved in this research is no more than minimal.

Study Description:

The purpose of this study is to explore social support, everyday stressors, and decision making behaviors reported by parenting adolescents enrolled in the Nurse Family Partnership.

Regulatory and other findings:

This research, which involves children, meets criteria at 45 CFR 46.404 (research involving no greater than minimal risk). Permission of one parent or guardian is sufficient.

Investigator's Responsibilities

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

Signed letters, along with stamped copies of consent forms and other recruitment materials will be scanned to you in a separate email. These consent forms must be used unless the IRB has given you approval to waive this requirement.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented (use the modification application available at <http://www.uncg.edu/orc/irb.htm>). Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB using the "Unanticipated Problem/Event" form at the same website.

CC:Susan Lane, Thomas McCoy, School Of NursingChris Farrior, (ORED), Non-IRB Review Contact, (ORC), Non-IRB Review Contact



Susan Lane< shlane@uncg.edu>

IRB Notice

IRB < irbcorre@uncg.edu>

Wed, Jan 18, 2012 at 3:58 PM

To: Eileen_Kohlenberg@uncg.edu

Cc: shlane@uncg.edu, tpmccoy@uncg.edu, irbcorre@uncg.edu

To: Eileen Kohlenberg
Adult Health
213 Moore Building

From: UNCG IRB

Authorized signature on behalf of IRB

Approval Date: 1/18/2012

Expiration Date of Approval: 1/16/2013

RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)

Submission Type: Renewal

Expedited Category: 8(c) Continuing Review - Data Analysis Only

Study #: 11-0156

Study Title: Decision Making Behaviors for Adolescent Mothers Enrolled in the Nurse Family Partnership

This submission has been approved by the IRB for the period indicated.

Study Description:

The purpose of this study is to explore social support, everyday stressors, and decision making behaviors reported by parenting adolescents enrolled in the Nurse Family Partnership.

Submission Description:

Renewal request, dated 1/18/12. Participant involvement complete, renewal requested for data analysis only.

Regulatory and other findings:

This research, which involves children, meets criteria at 45 CFR 46.404 (research involving no greater than minimal risk). Permission of one parent or guardian is sufficient.

Investigator's Responsibilities

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

Signed letters, along with stamped copies of consent forms and other recruitment materials will be scanned to you in a separate email. These consent forms must be used unless the IRB has given you approval to waive this requirement.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented (use the modification application available at <http://www.uncg.edu/orc/irb.htm>). Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB using the "Unanticipated Problem/Event" form at the same website.

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APPENDIX M

NURSE-FAMILY PARTNERSHIP SUPPORT LETTERS



December 17, 2010

Susan H. Lane RN, MSN
103 Lyman Street, Shelby,
NC 28152
shlane@uncg.edu

Dear Susan,

Thank you for your letter and I apologize for not acknowledging it sooner. The committee reviewed your letter and has the following response.

Study Design: In regard to study design, although using number of visits as a continuous variable is methodologically sound, the committee does not support involving vulnerable teen clients in research activities until at least 6 months post partum. The reasons for this were discussed in the previous letter.

Consent: For client consent, we will accept the method approved by your IRB.

Site Recruitment: In regard to site recruitment we have reconsidered your request to use the Guilford site however, in talking to NFP field staff we learned that in addition to the supervisor being new, she has added complexity in her role because she must coordinate NFP in conjunction with another HV program. Therefore, it is not in the best interest of the site to participate in research activities at this time.

I have included a list of NC NFP sites along with the number of active clients age 13-18. I have not checked into the details of each site to know which ones would be available for research. However, once you decide whether you can adapt your study design as described above, then the committee can assist you to determine which of sites listed below could be approached for participation in your study.

Guilford – 16 (not available for research at this time)
Community Health Services - 31
Wake County NFP - 21
Robeson County - 21
Cleveland Co. HD - 21
McDowell HD - 35
Pitt County - 23
Buncombe County - 29

After the first of the year, I will be leaving NFP, and in my absence, please address any further correspondence about this study to Mariarosa Gasbarro and Bette Brassfield (cc'd on this letter). Mariarosa has co-chaired the RAPComm with me and is very familiar with your proposal. Bette



will be taking over as the new chair. I am confident that they will provide the necessary continuity to assist you with this study.

Best wishes for the new year.

Sincerely,

A handwritten signature in black ink that reads "Kirsten J. Black". The signature is fluid and cursive, with the first name "Kirsten" and last name "Black" clearly legible.

Kirsten J. Black, PhD, MPH, RD
Program Evaluator
Nurse-Family Partnership National Service Office
1900 Grant St., Suite 400, Denver, CO 80203-4303
Direct: 303.327.4276 | Cell: 720.425.7660 | E-Fax: 303.951.3876



February 25, 2011

Susan Hayes Lane
103 Lyman Street
Shelby, North Carolina 28152

Re: Decision-Making Behaviors for Adolescents Who are Pregnant and Adolescent Mothers
Enrolled in the Nurse-Family Partnership: Research Site Selection

Dear Ms. Lane:

The Nurse Family Partnership Research and Publications Committee has reconsidered the involvement of Guilford Child Development as a research participant in your study. Based on a review of your research plan and the applicability of the criteria for site selection, the committee amends its initial limitation and supports the inclusion of Guilford as a contact site for your work.

Please provide us with a copy of your IRB approval once you receive it. We also request that you advise RAPComm of any study modifications as well as when the study is finished or discontinued.

Again, best wishes with your research.

Sincerely,

A handwritten signature in cursive script that reads "Bette Simon Brassfield".

Bette Simon Brassfield, PhD, MPA, BSN, RN
Education Manager | RAPComm
Nurse-Family Partnership National Service Office
1900 Grant Street, Suite 400, Denver, CO 80203-4303
Direct: 303.327.4385 | Toll free: 866.864.5226 | Fax: 303.951.3887

APPENDIX N

RESEARCH QUESTION 1

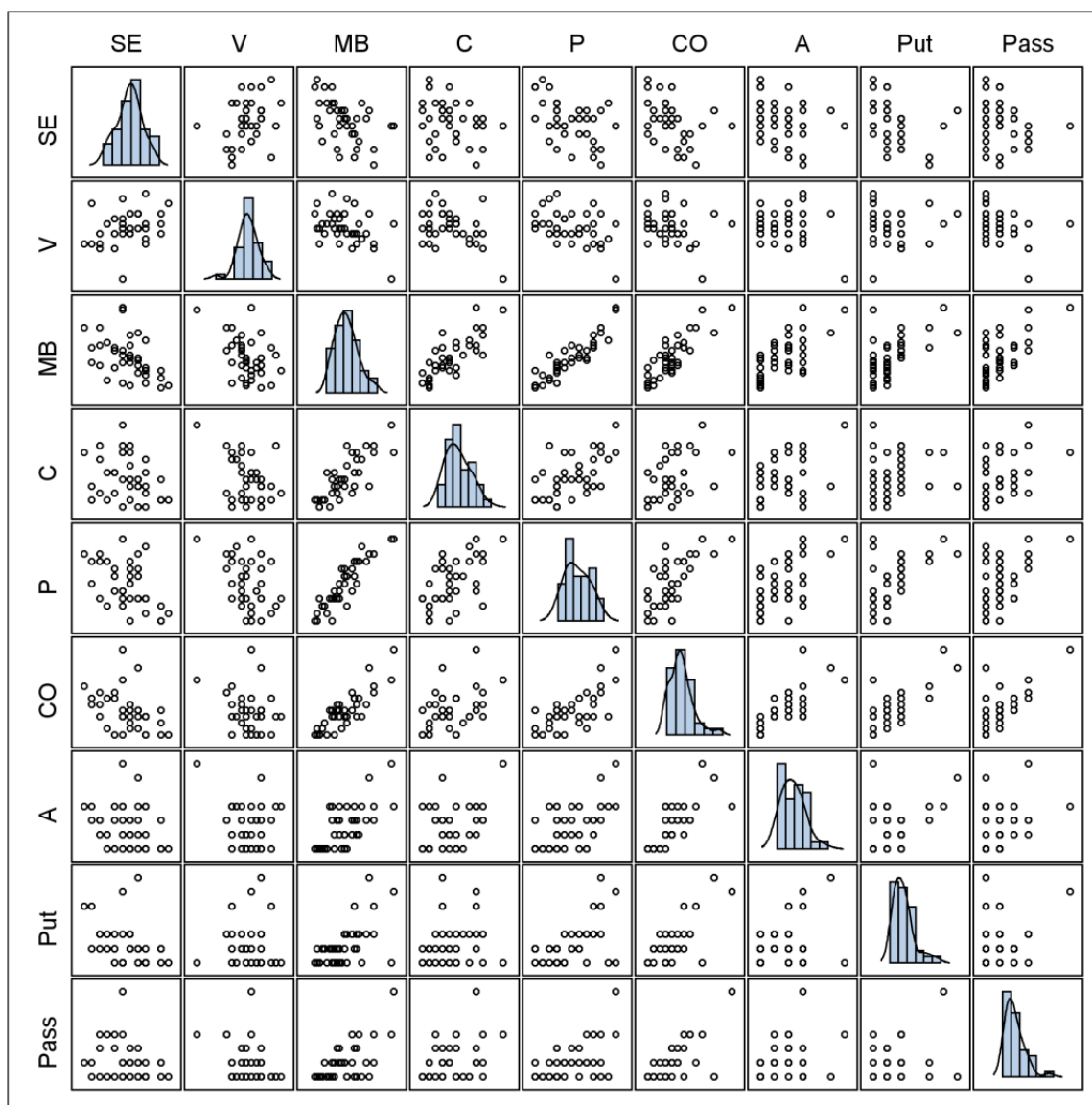


Figure N1. Statistical assumptions for research question 1.

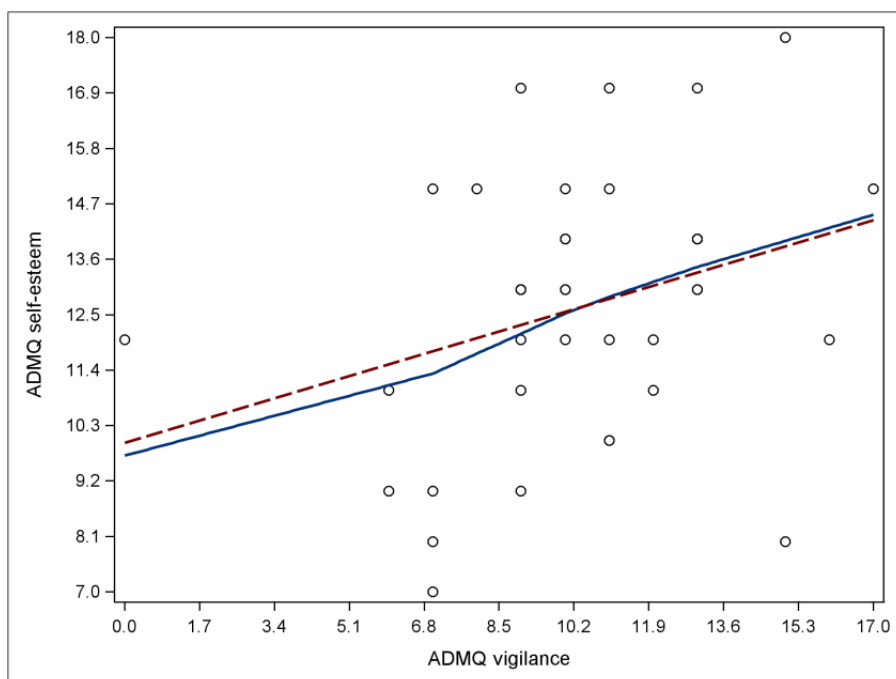


Figure N2. ADMQ scatterplot for self-esteem and vigilance.

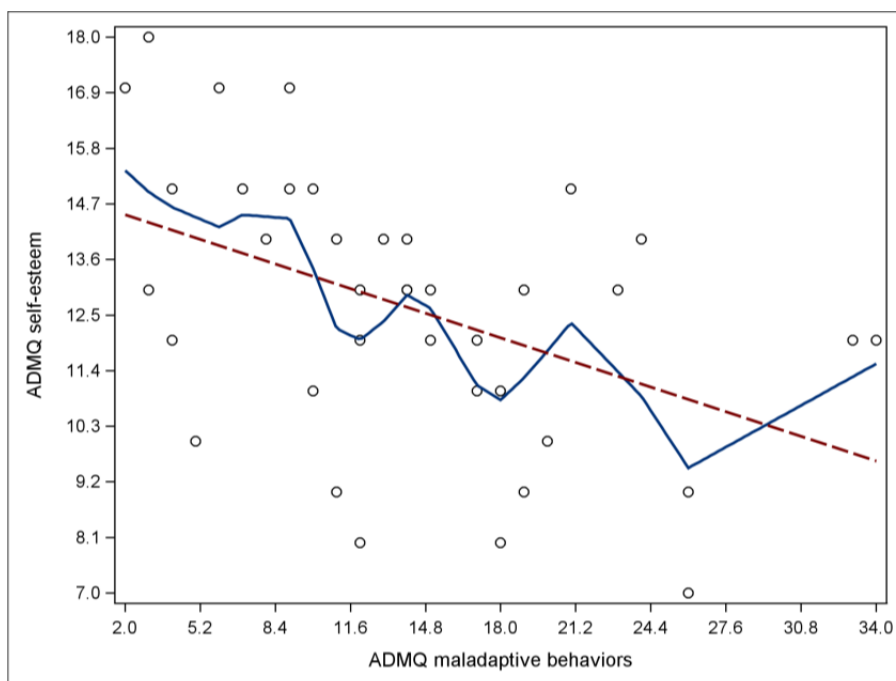


Figure N3. ADMQ scatterplot for self-esteem and maladaptive behaviors.

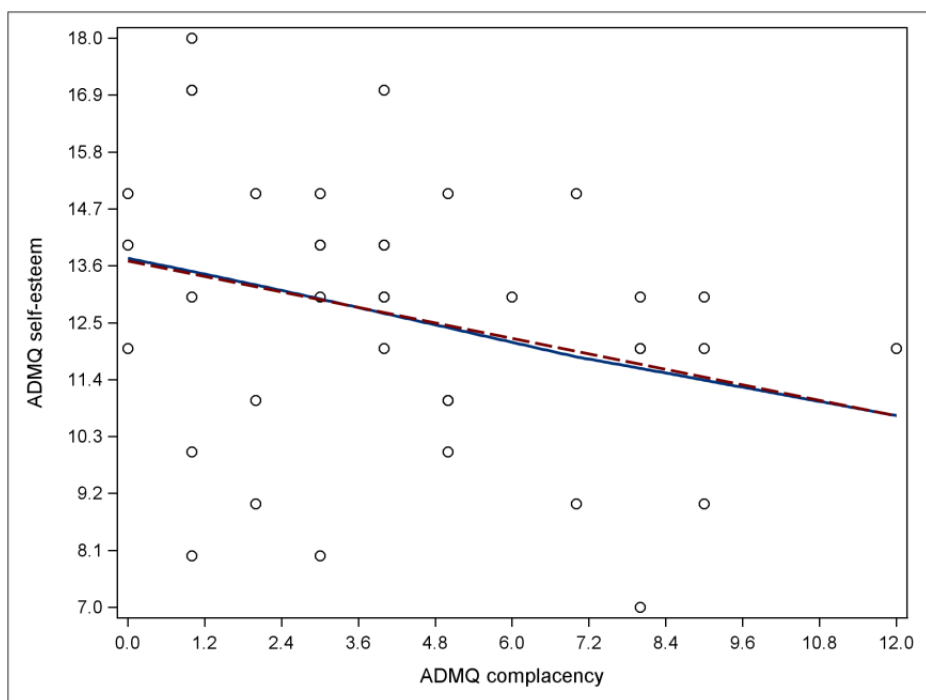


Figure N4. ADMQ scatterplot for self-esteem and complacency.

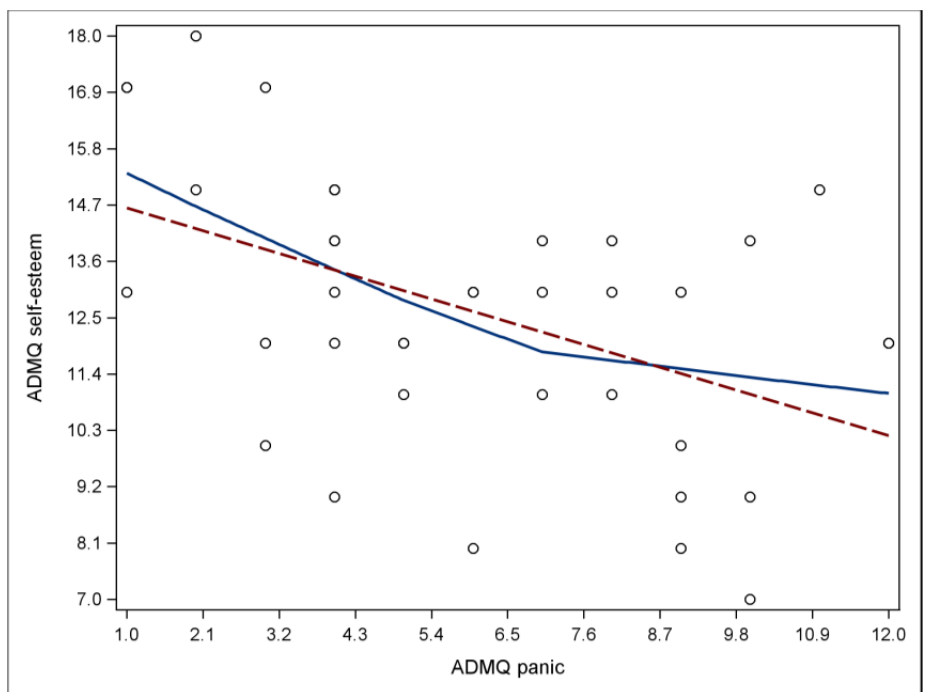


Figure N5. ADMQ scatterplot for self-esteem and panic.

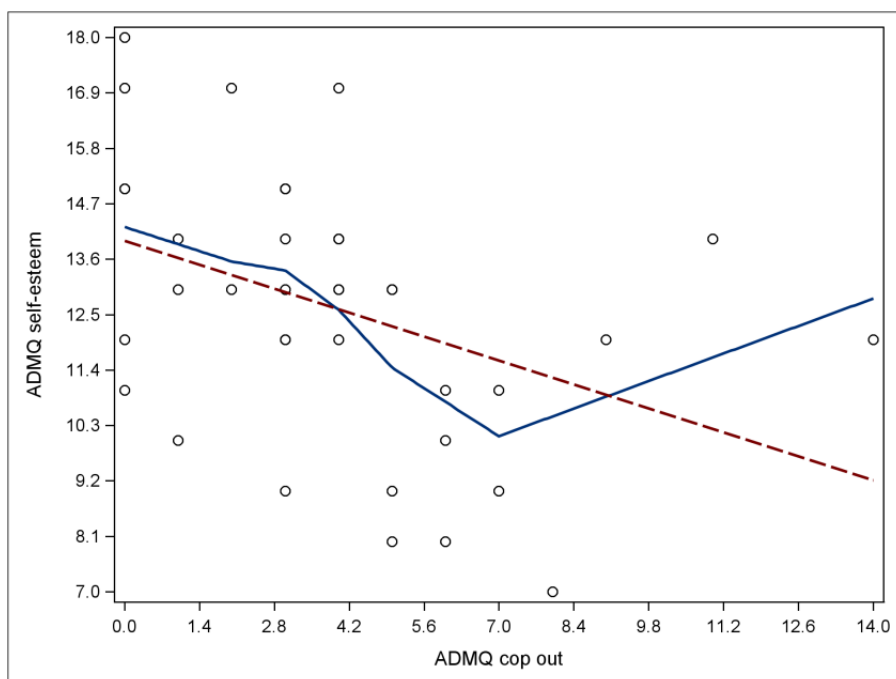


Figure N6. ADMQ scatterplot for self-esteem and cop out.

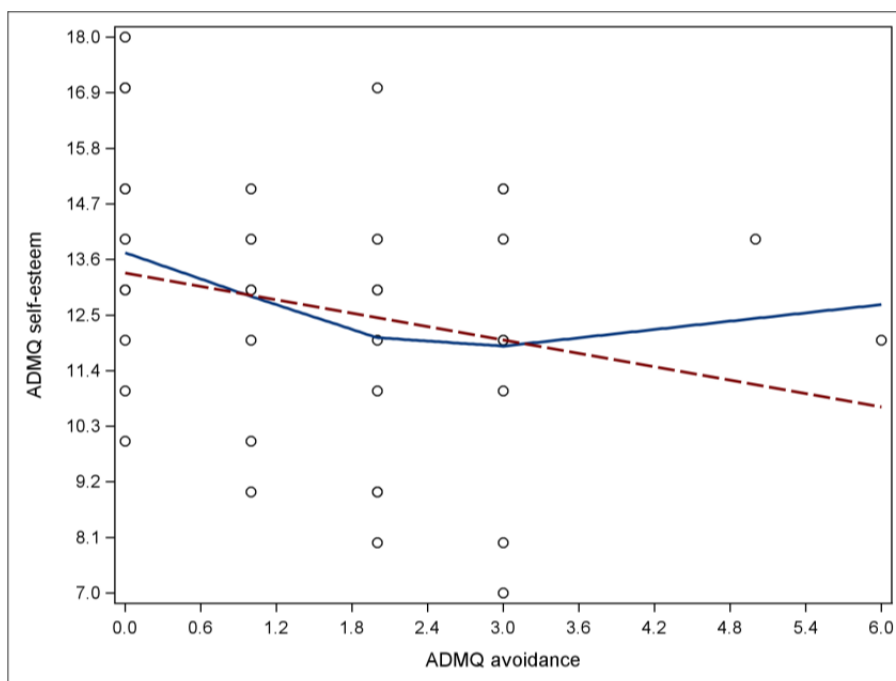


Figure N7. ADMQ scatterplot for self-esteem and defensive avoidance.

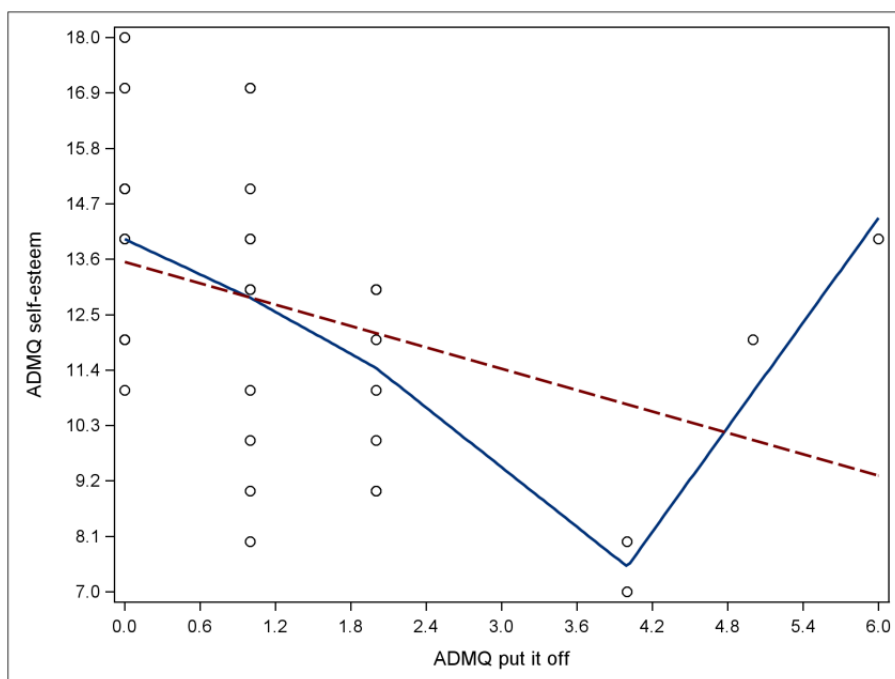


Figure N8. ADMQ scatterplot for self-esteem and put it off.

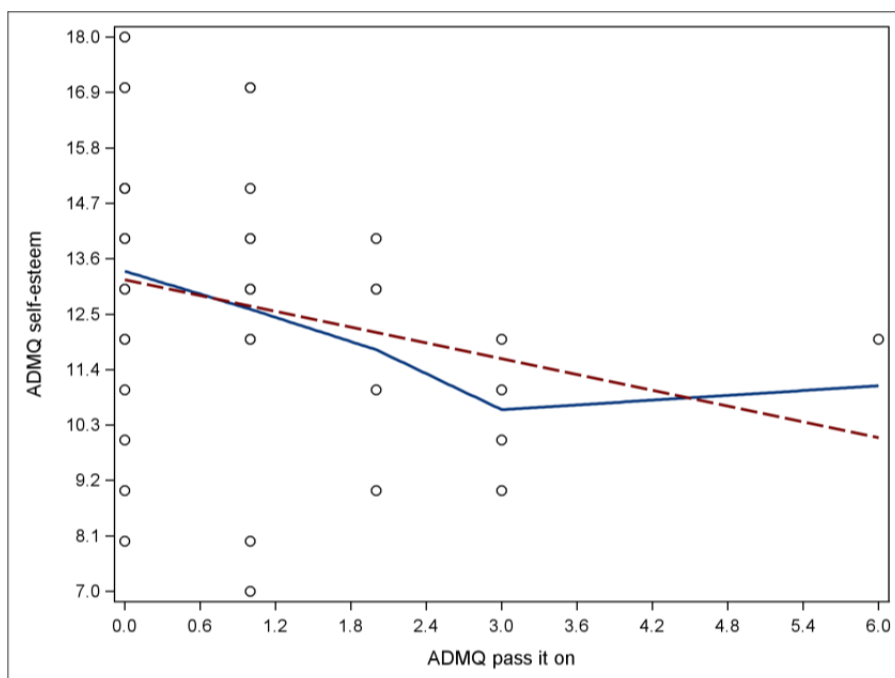


Figure N9. ADMQ scatterplot for self-esteem and pass it on.

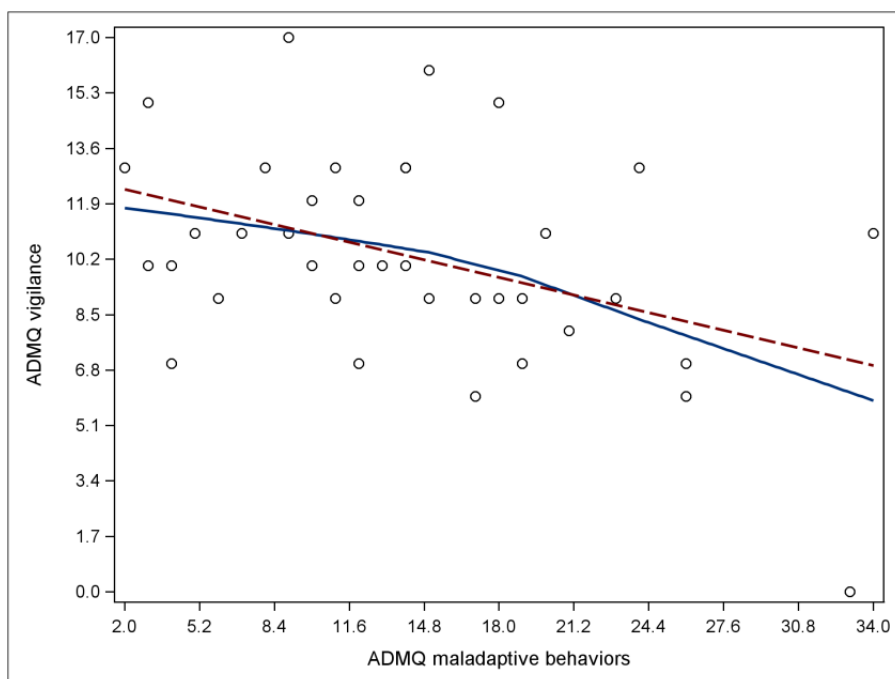


Figure N10. ADMQ scatterplot for vigilance and maladaptive behaviors.

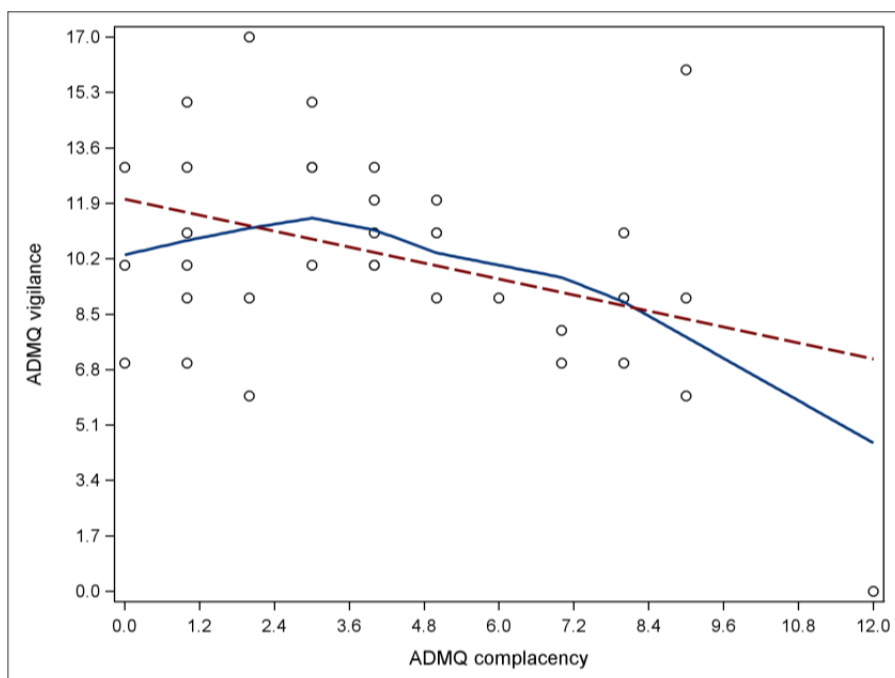


Figure N11. ADMQ scatterplot for vigilance and complacency.

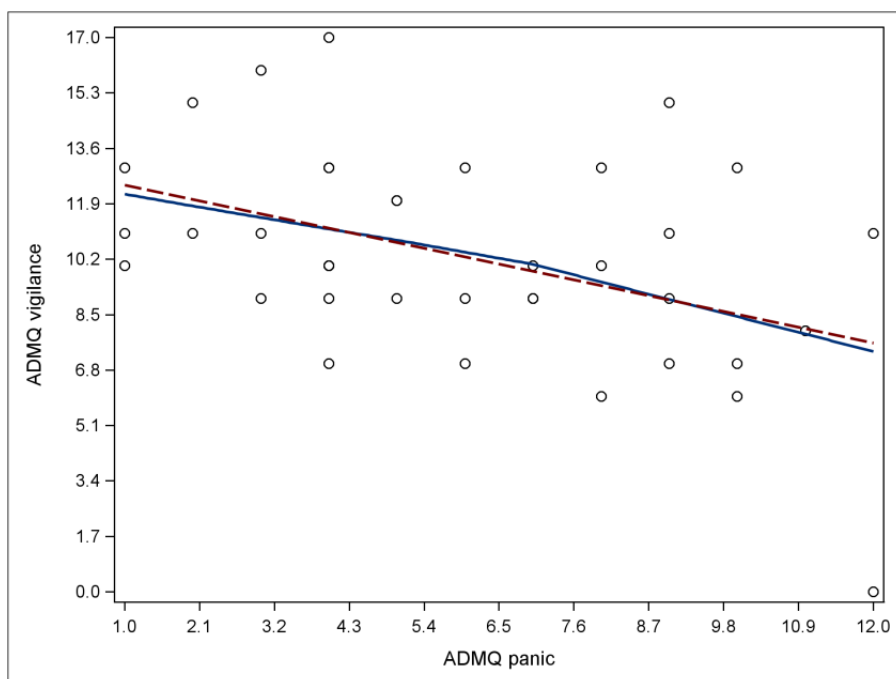


Figure N12. ADMQ scatterplot for vigilance and panic.

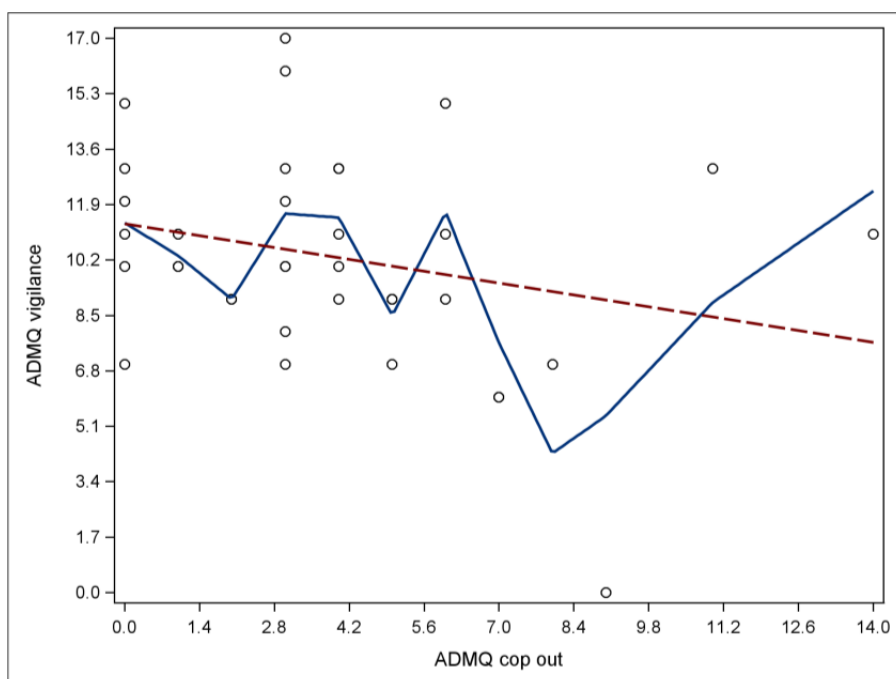


Figure N13. ADMQ scatterplot for vigilance and cop out.

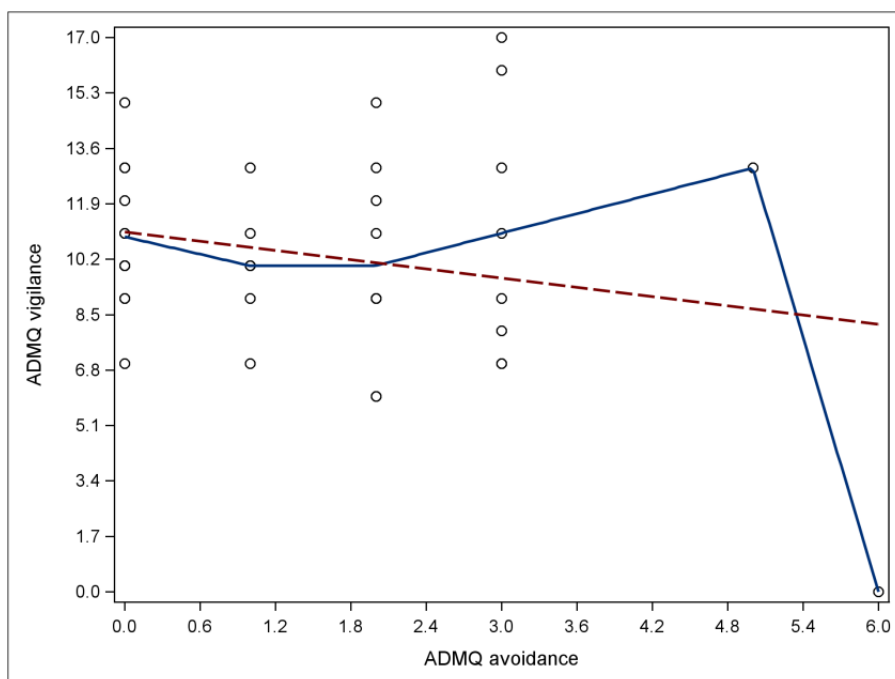


Figure N14. ADMQ scatterplot for vigilance and defensive avoidance.

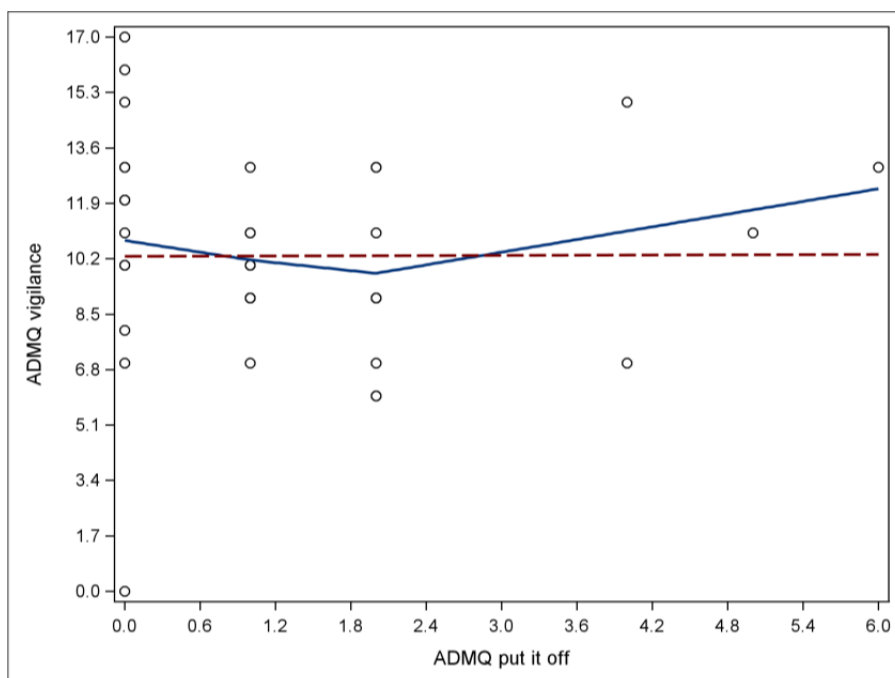


Figure N15. ADMQ scatterplot for vigilance and put it off.

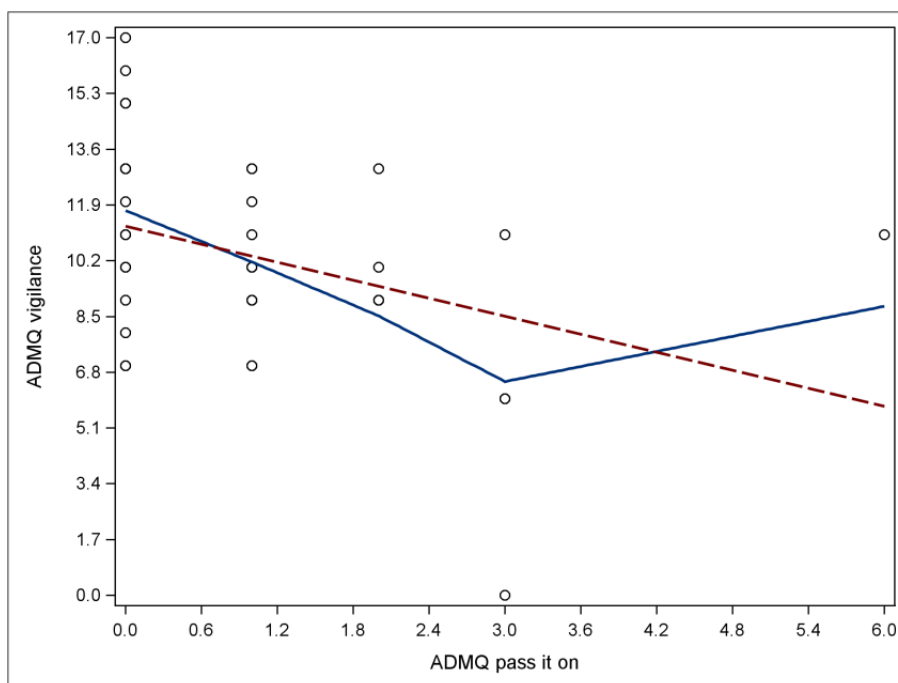


Figure N16. ADMQ scatterplot for vigilance and pass it on.

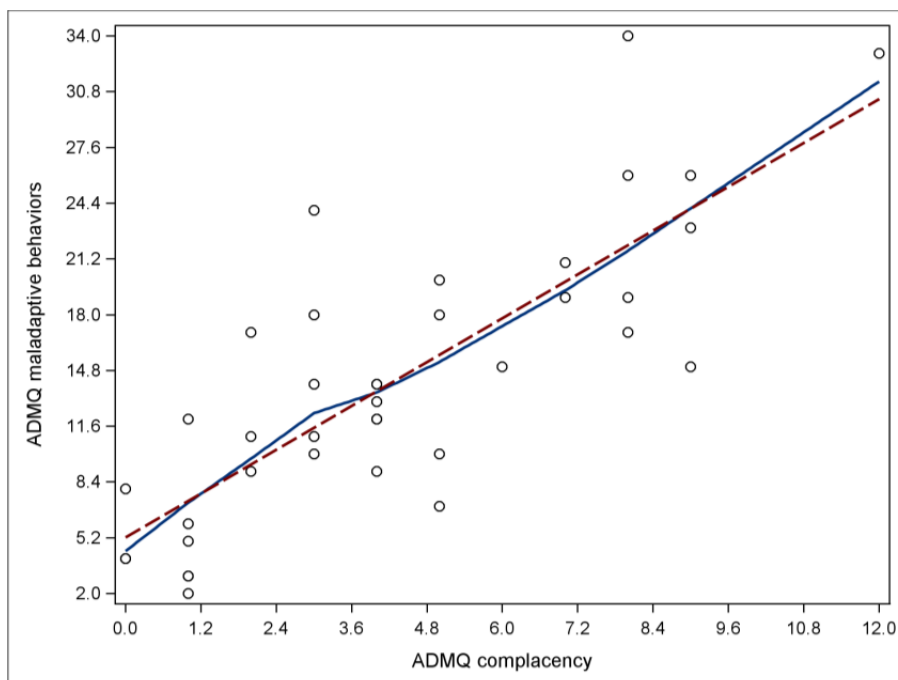


Figure N17. ADMQ scatterplot for maladaptive behaviors and complacency.

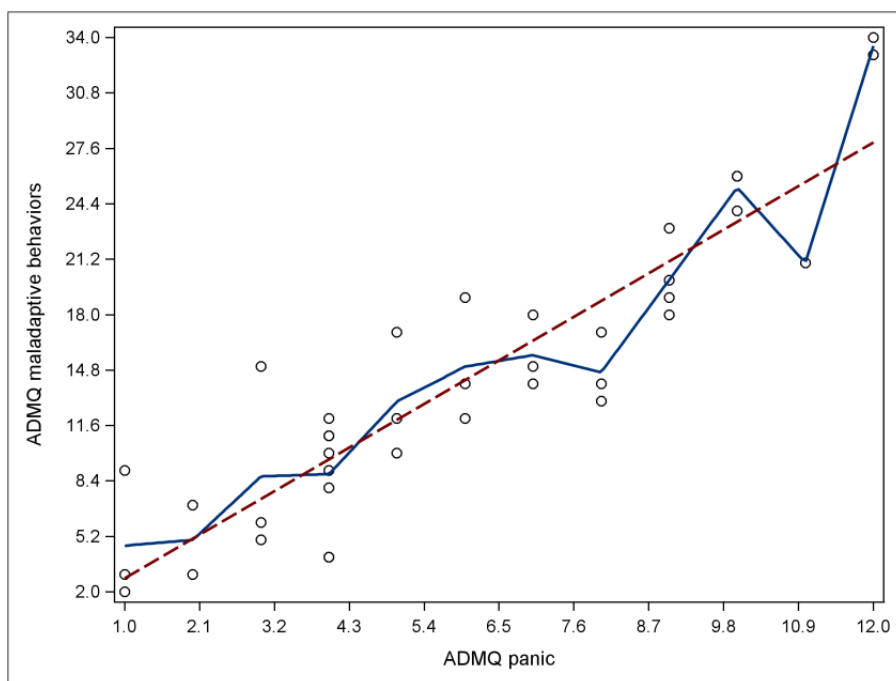


Figure N18. ADMQ scatterplot for maladaptive behaviors and panic.

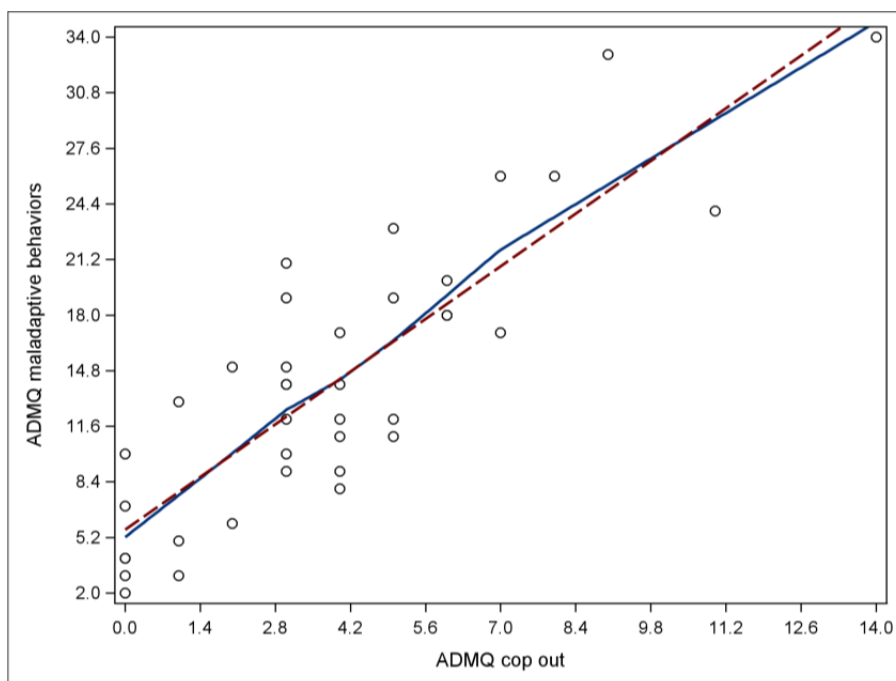


Figure N19. ADMQ scatterplot for maladaptive behaviors and cop out.

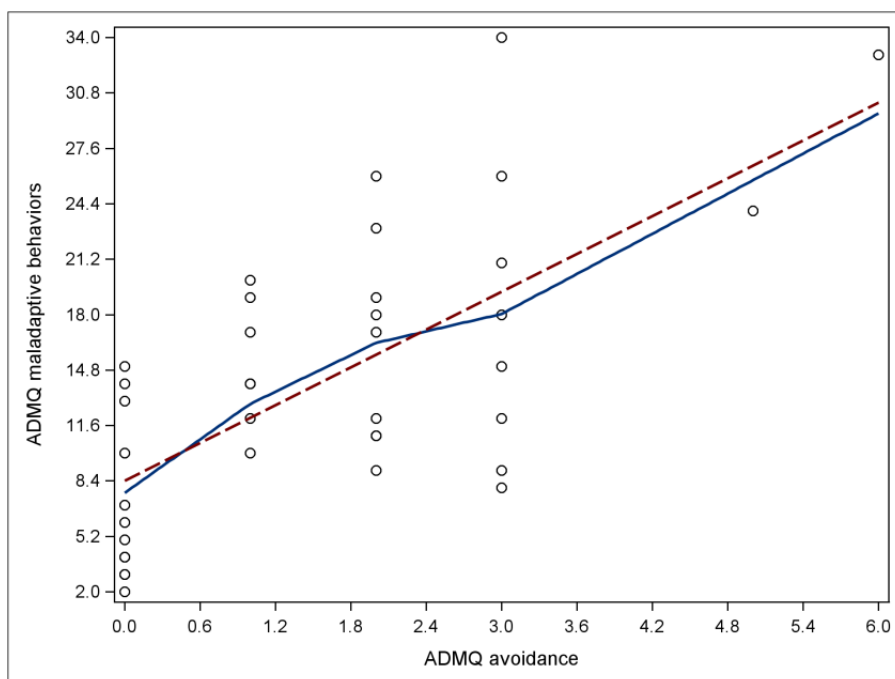


Figure N20. ADMQ scatterplot for maladaptive behaviors and defensive avoidance.

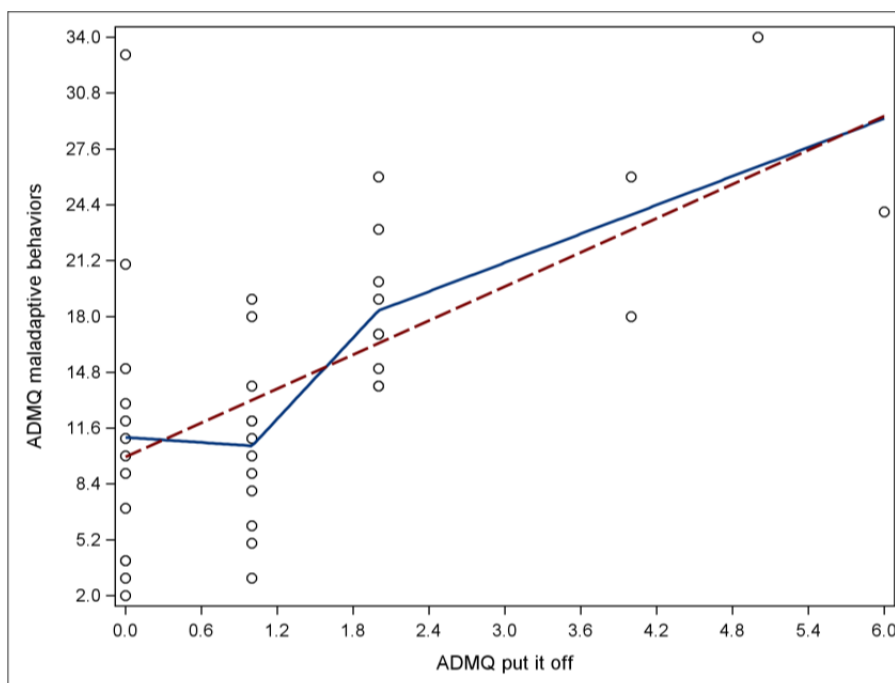


Figure N21. ADMQ scatterplot for maladaptive behaviors and put it off.

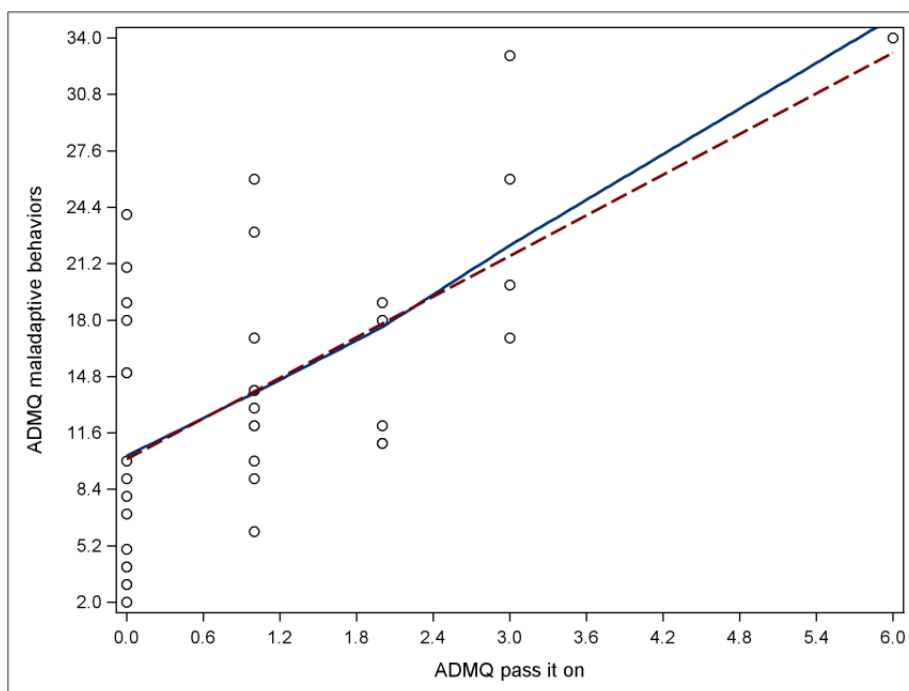


Figure N22. ADMQ scatterplot for maladaptive behaviors and pass it on.

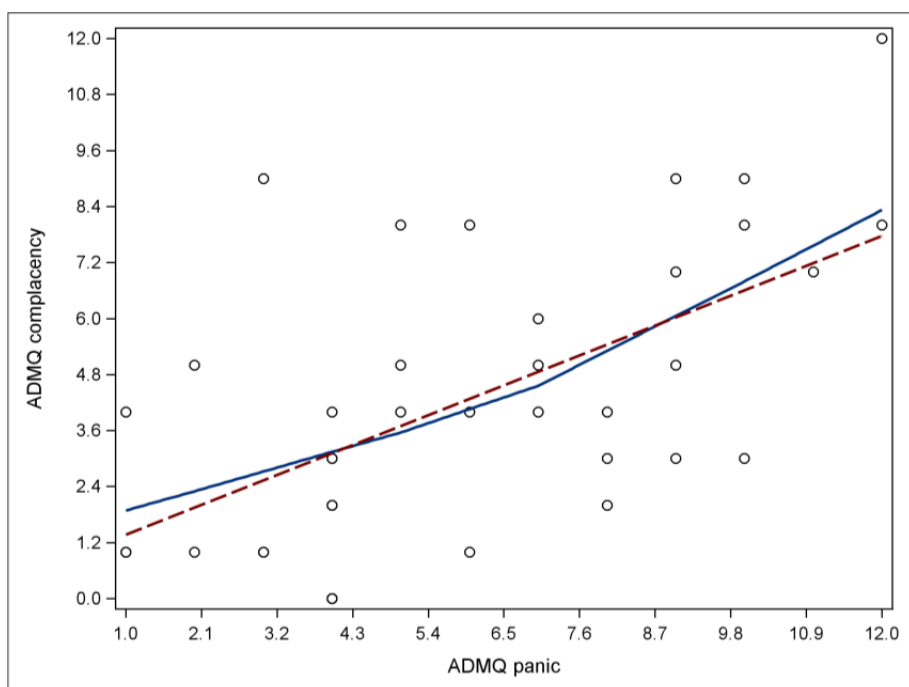


Figure N23. ADMQ scatterplot for complacency and panic.

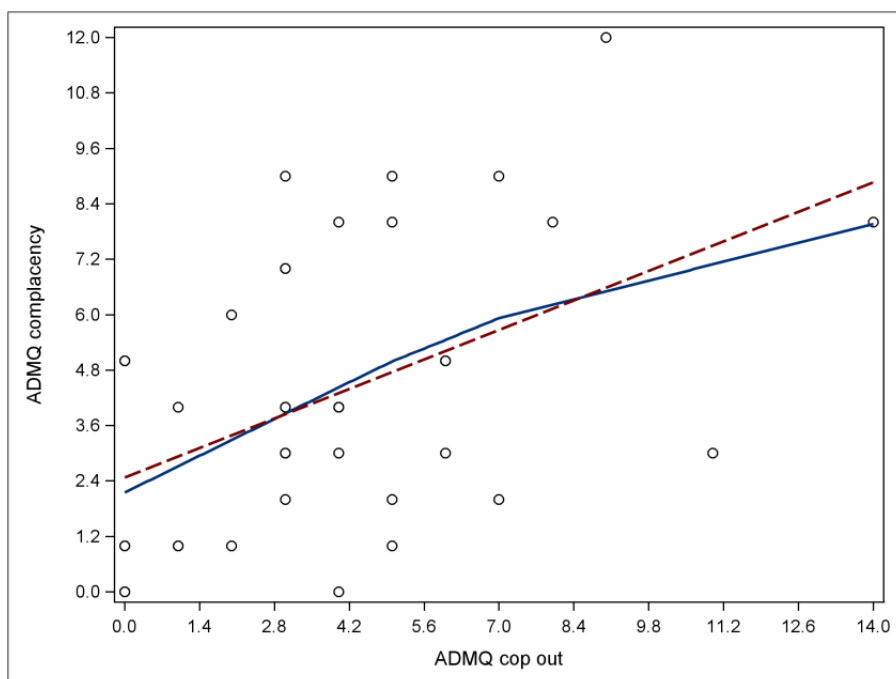


Figure N24. ADMQ scatterplot for complacency and cop out.

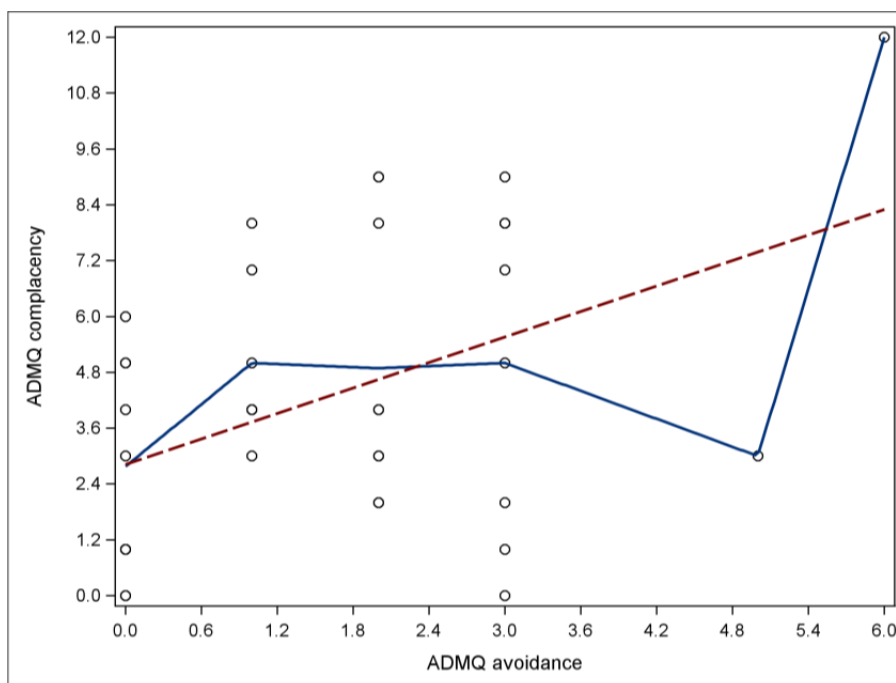


Figure N25. ADMQ scatterplot for complacency and defensive avoidance.

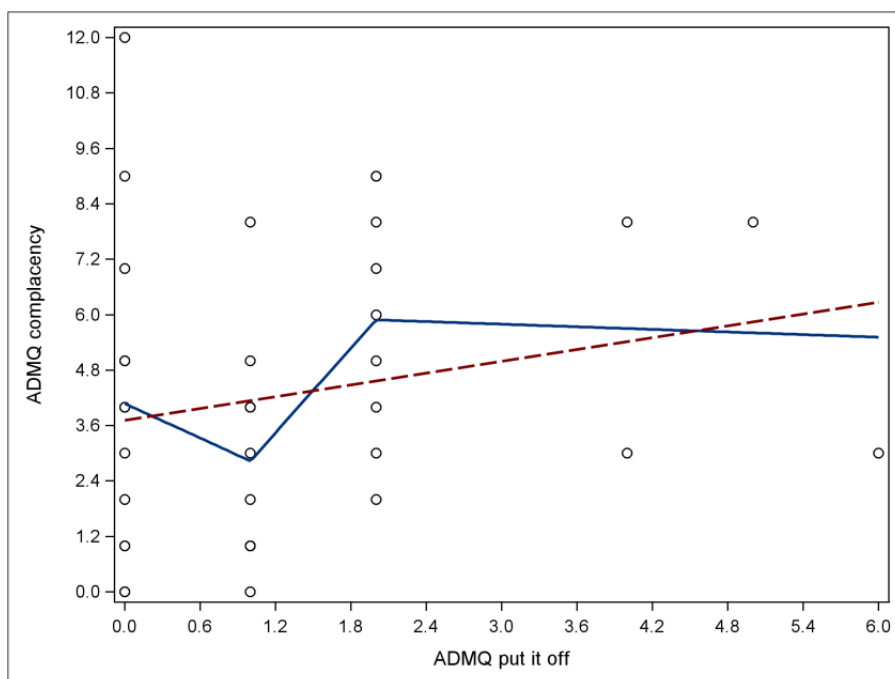


Figure N26. ADMQ scatterplot for complacency and put it off.

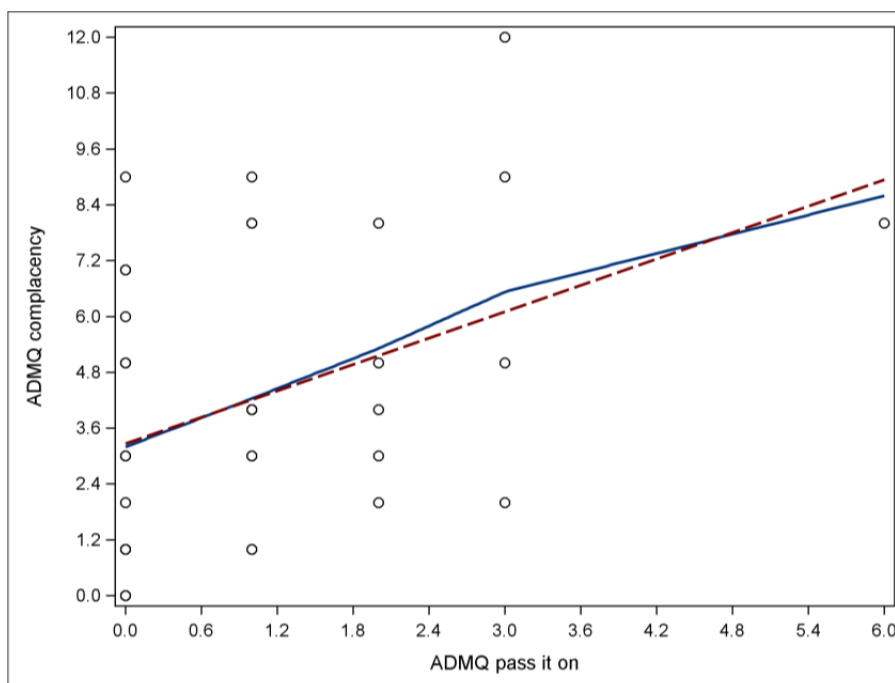


Figure N27. ADMQ scatterplot for complacency and pass it on.

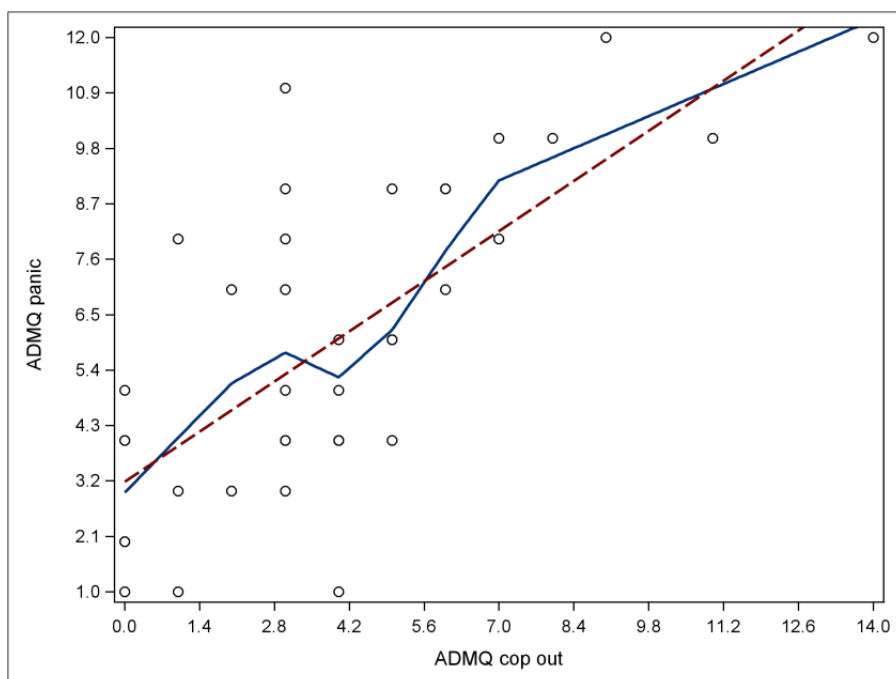


Figure N28. ADMQ scatterplot for panic and cop out.

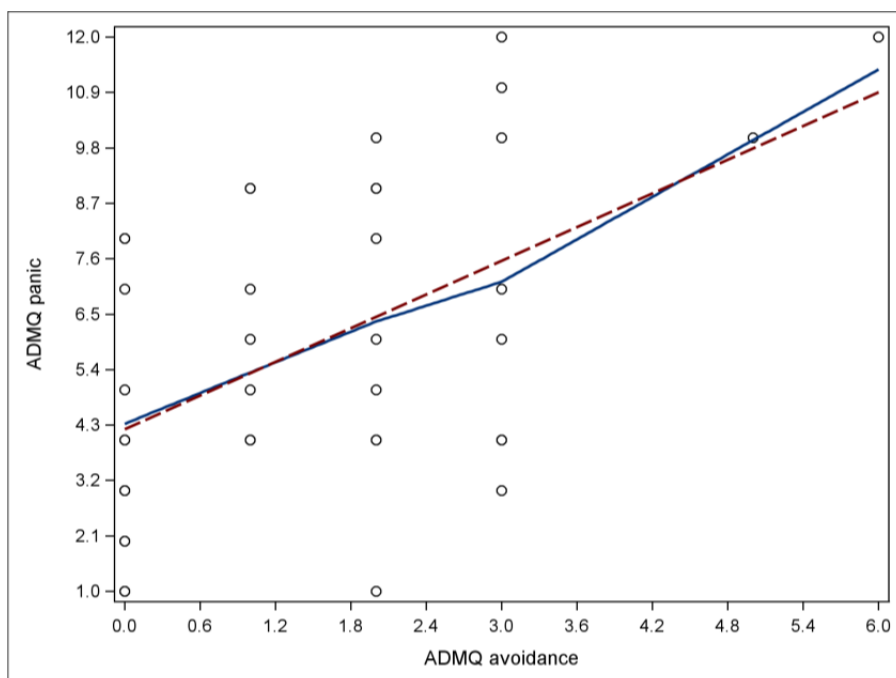


Figure N29. ADMQ scatterplot for panic and defensive avoidance.

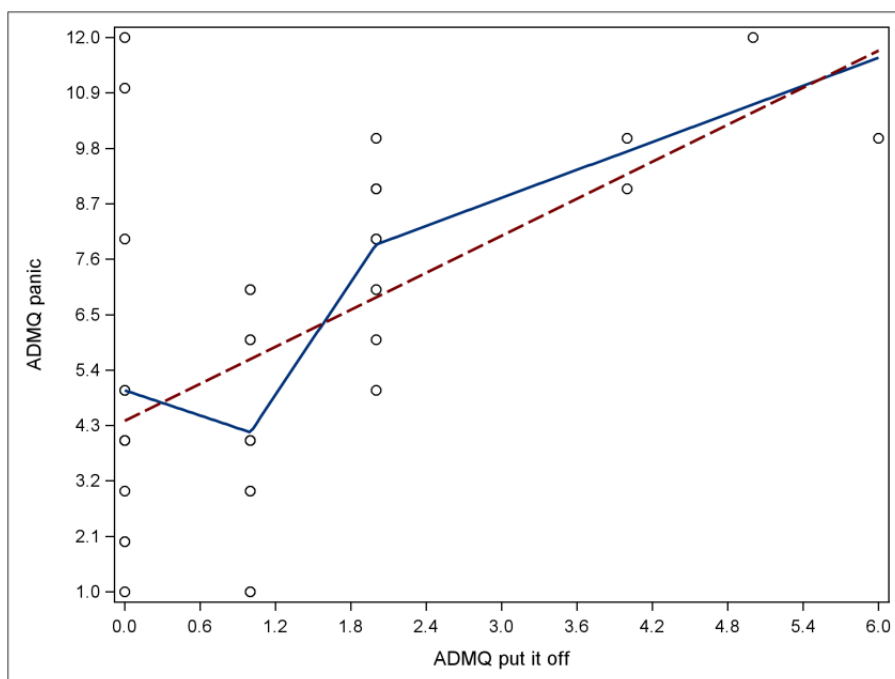


Figure N30. ADMQ scatterplot for panic and put it off.

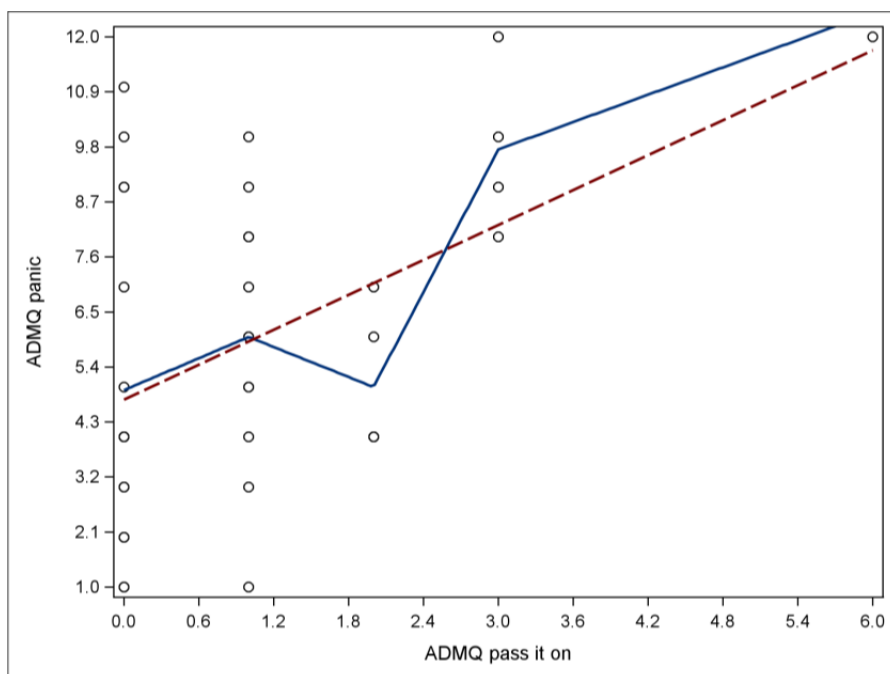


Figure N31. ADMQ scatterplot for panic and pass it on.

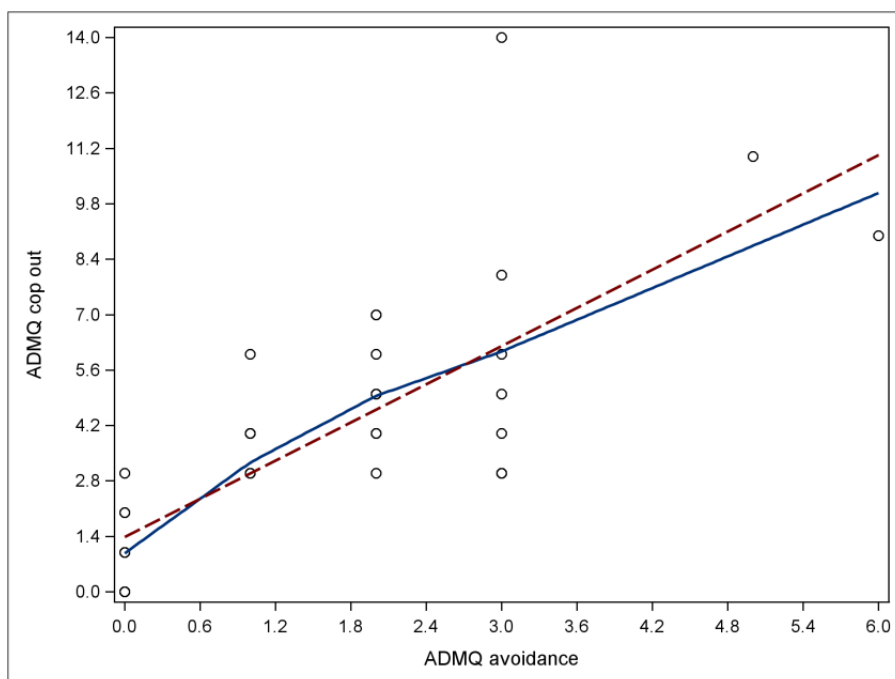


Figure N32. ADMQ scatterplot for cop out and defensive avoidance.

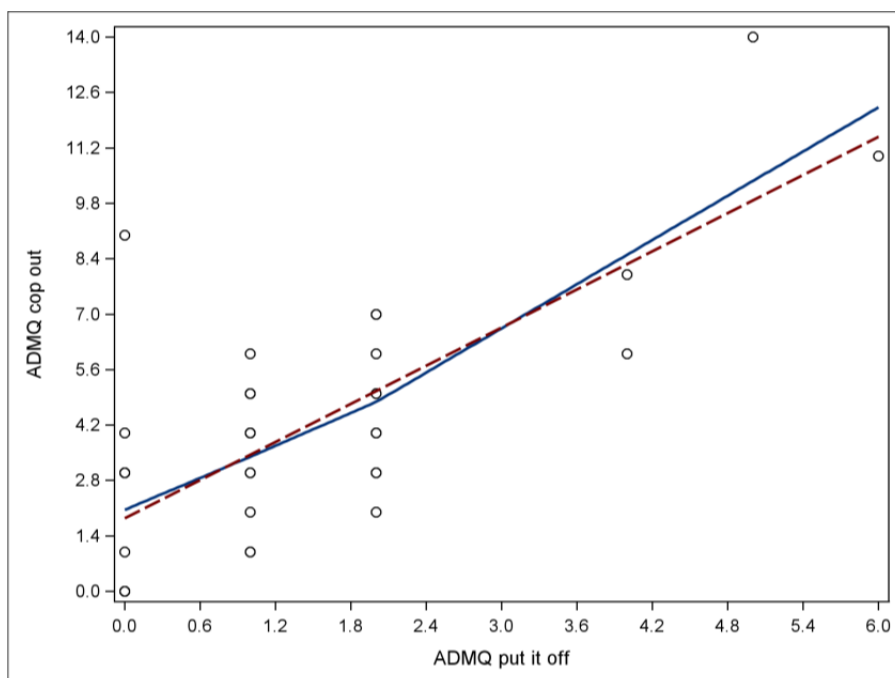


Figure N33. ADMQ scatterplot for cop out and put it off.

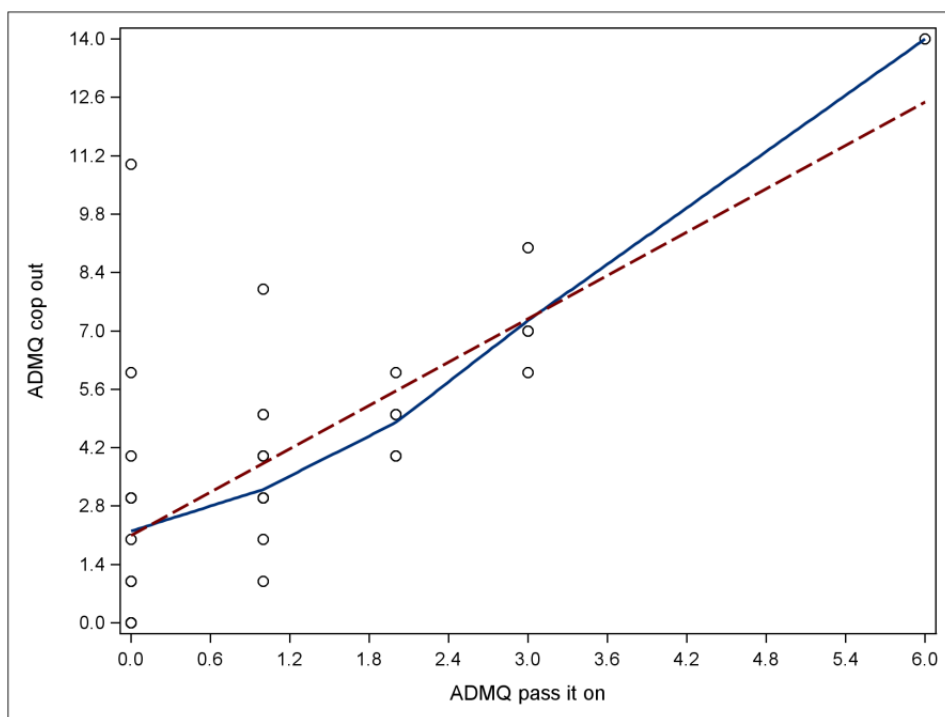


Figure N34. ADMQ scatterplot for cop out and pass it on.

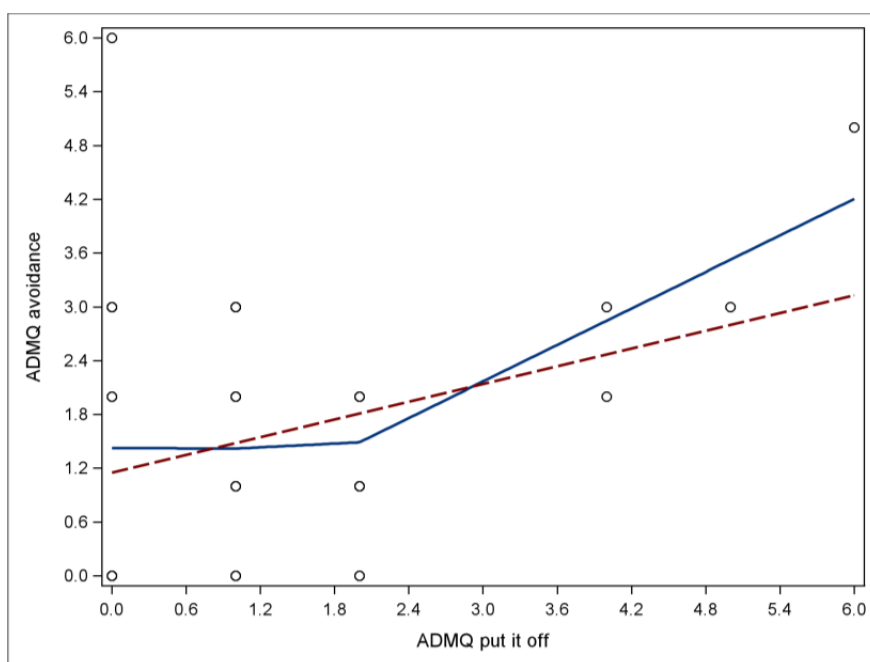


Figure N35. ADMQ scatterplot for defensive avoidance and put it off.

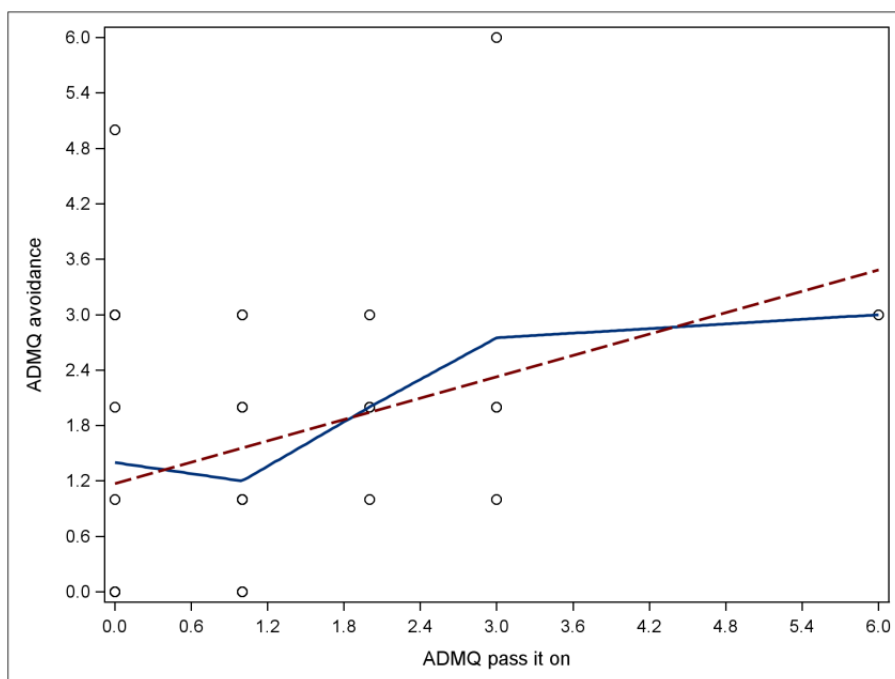


Figure N36. ADMQ scatterplot for defensive avoidance and pass it on.

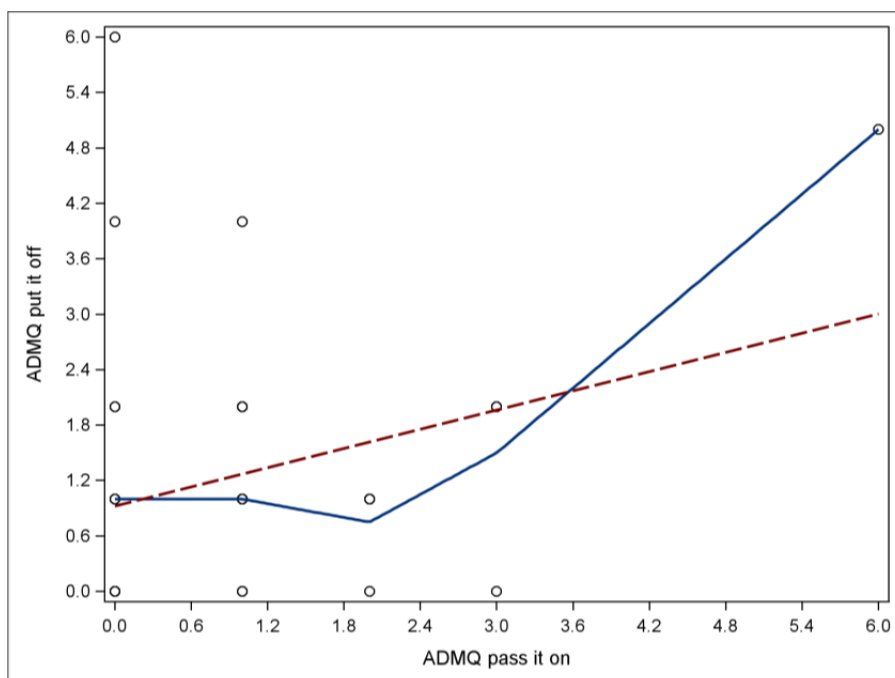


Figure N37. ADMQ scatterplot for put if off and pass it on.

APPENDIX O

RESEARCH QUESTION 2

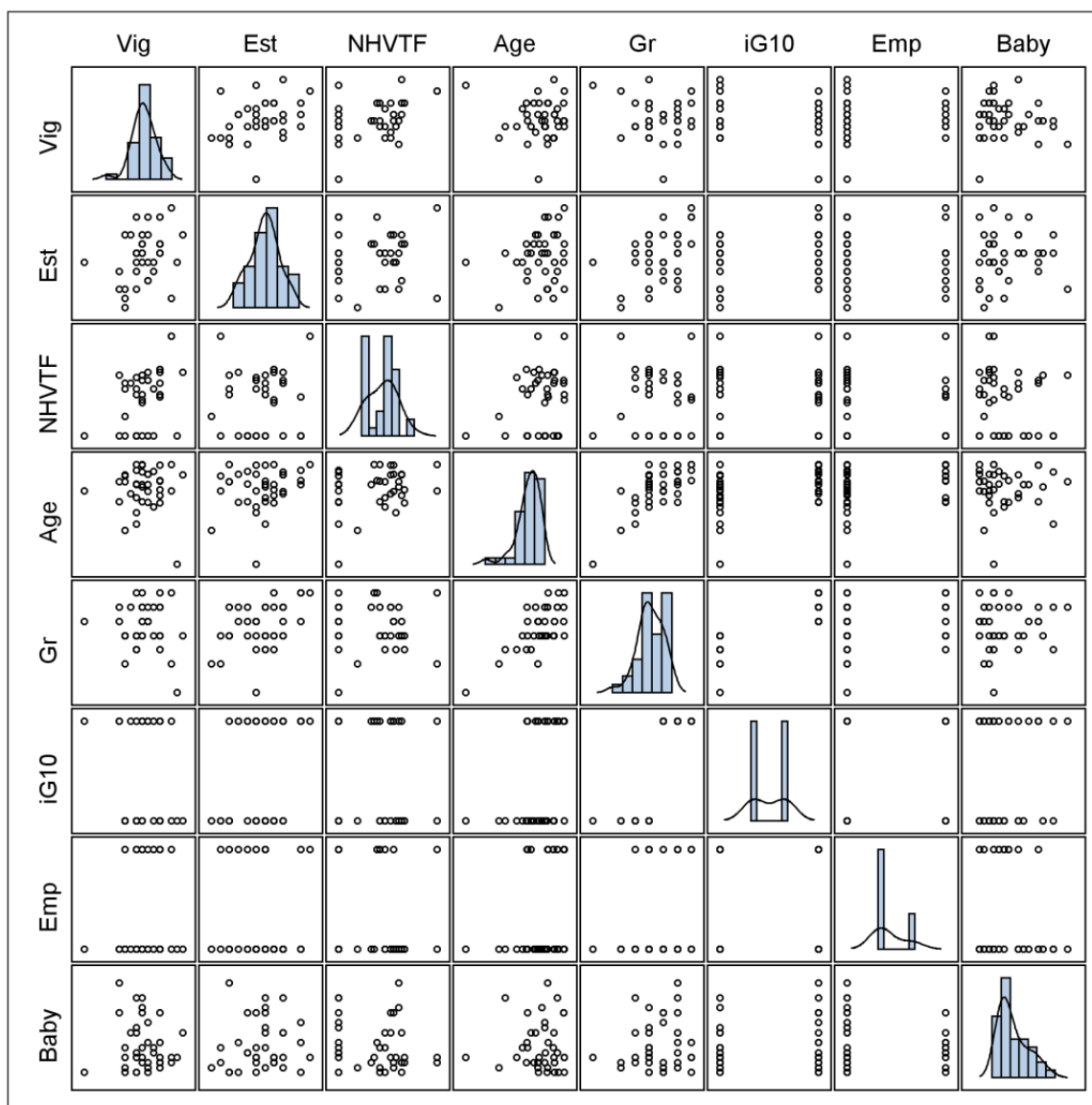


Figure O1. Statistical assumptions for research question 2.

APPENDIX P

RESEARCH QUESTION 3



Figure P1. Statistical assumptions for research question 3.

APPENDIX Q

RESEARCH QUESTION 4

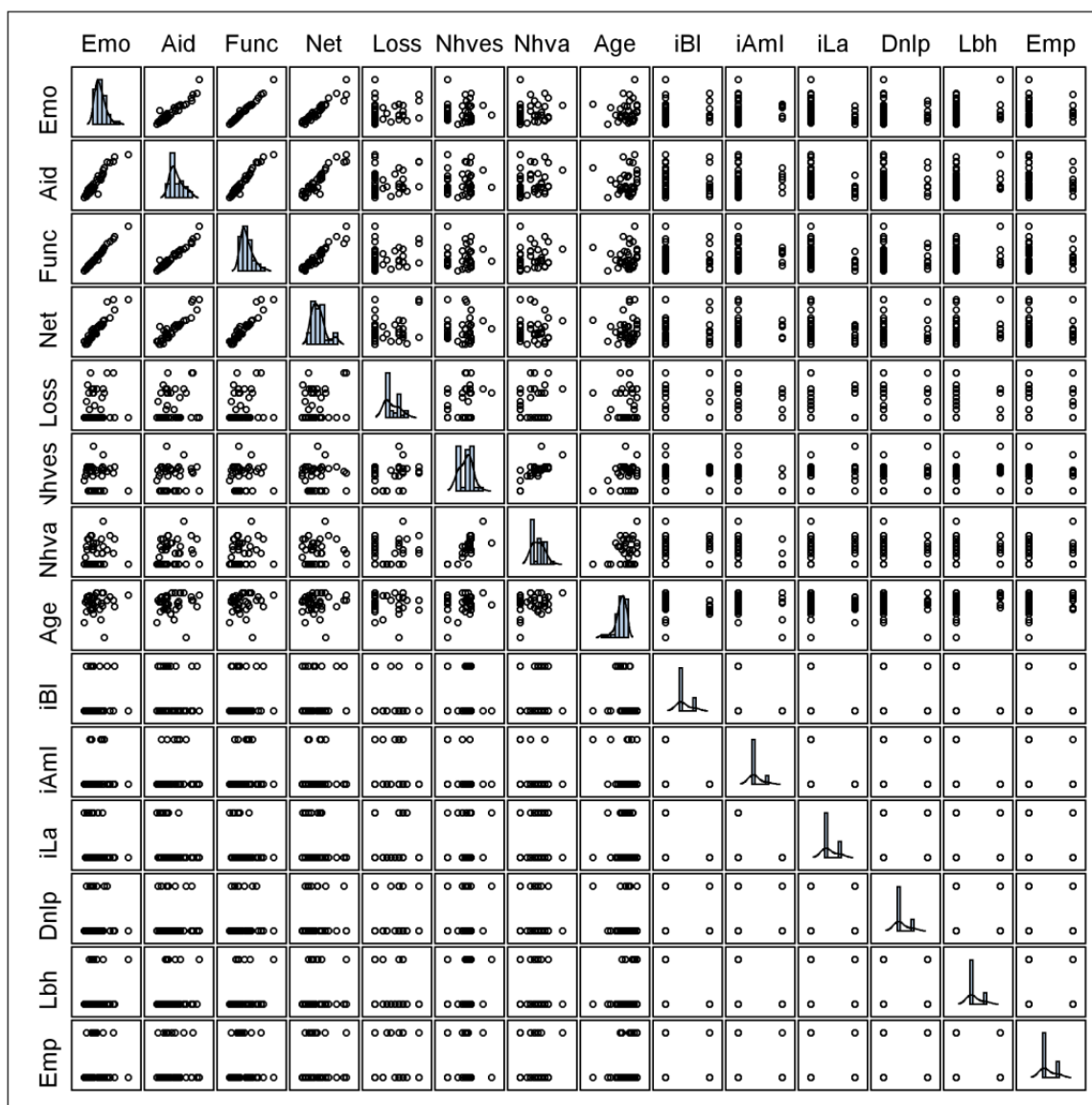


Figure Q1. Statistical assumptions for research question 4.

APPENDIX R

RESEARCH QUESTION 5

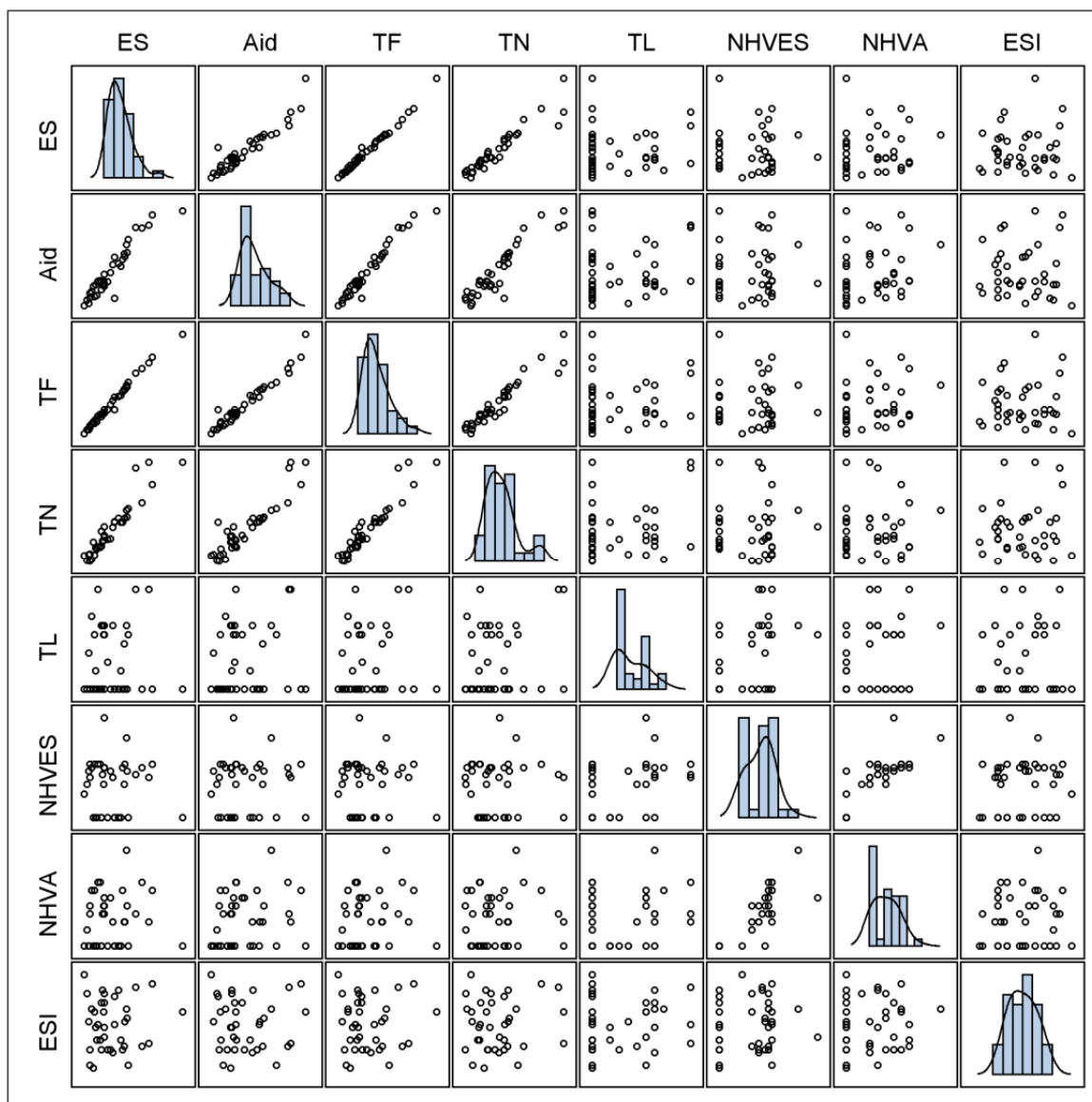


Figure R1. Statistical assumptions for research question 5.

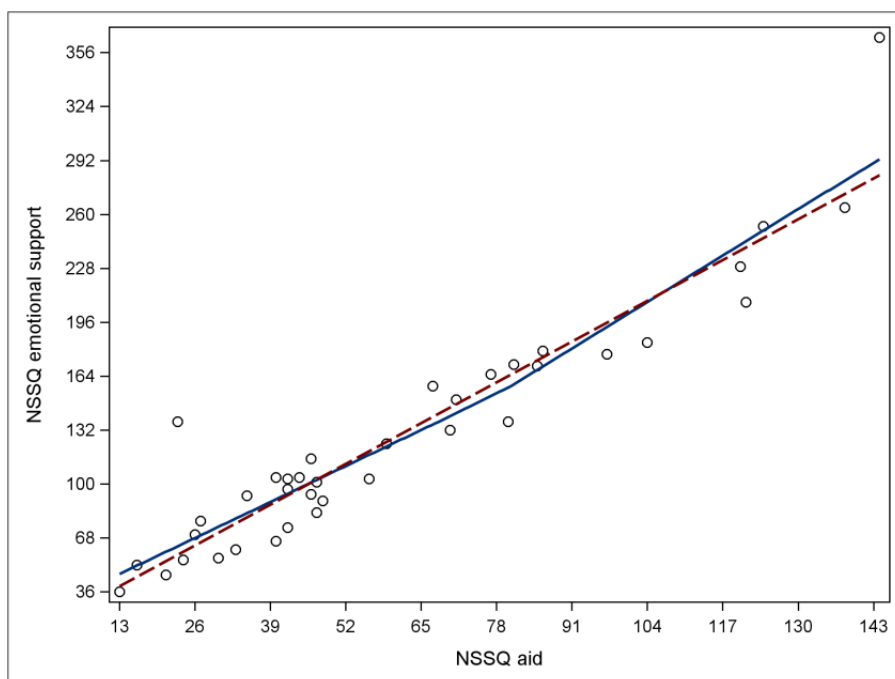


Figure R2. Scatterplot for NSSQ subscales of emotional support and aid.

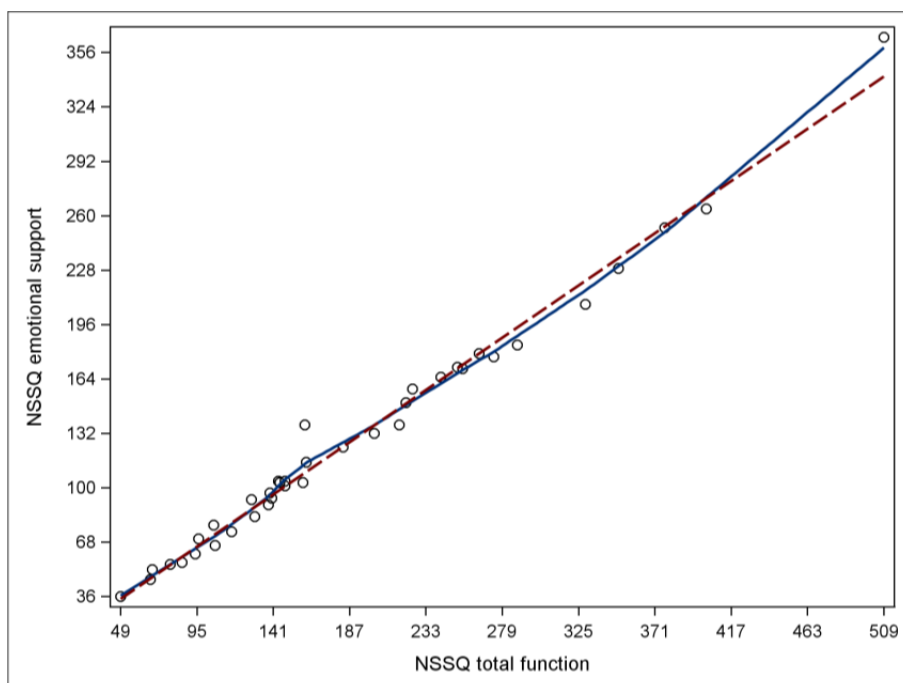


Figure R3. Scatterplot for NSSQ subscales of emotional support and total function.

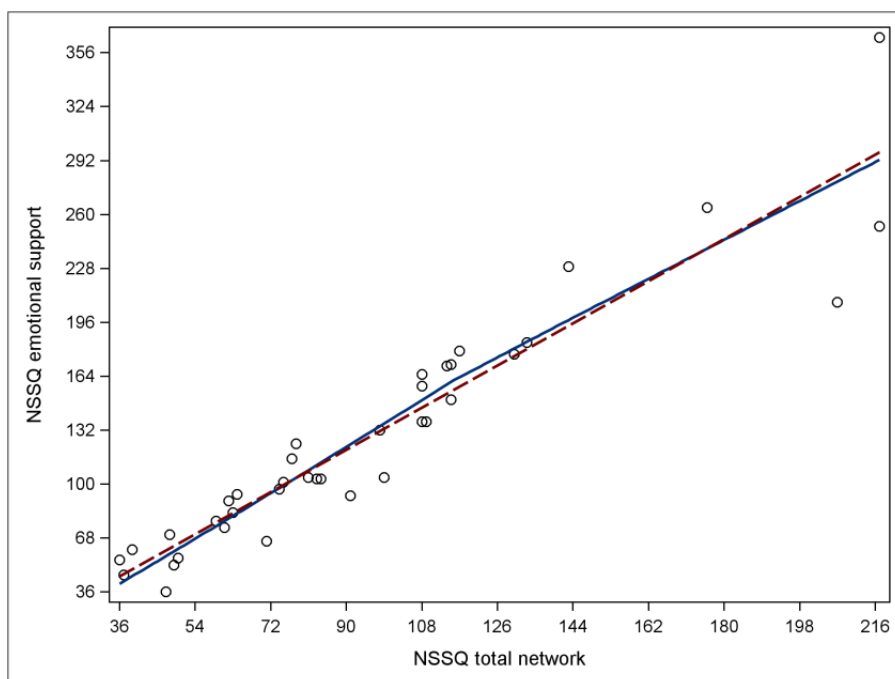


Figure R4. Scatterplot for NSSQ subscales of emotional support and total network.

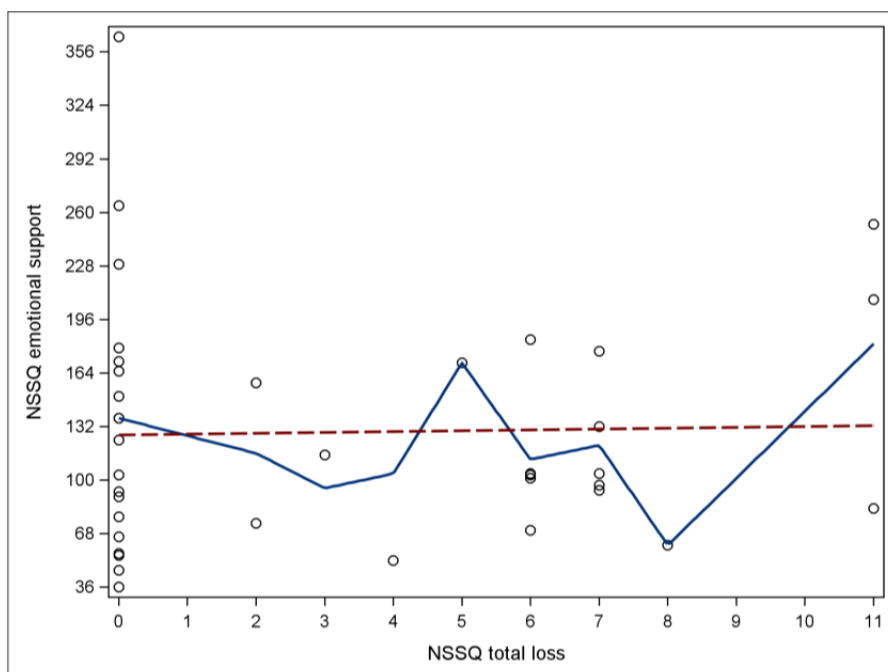


Figure R5. Scatterplot for NSSQ subscales of emotional support and total loss.

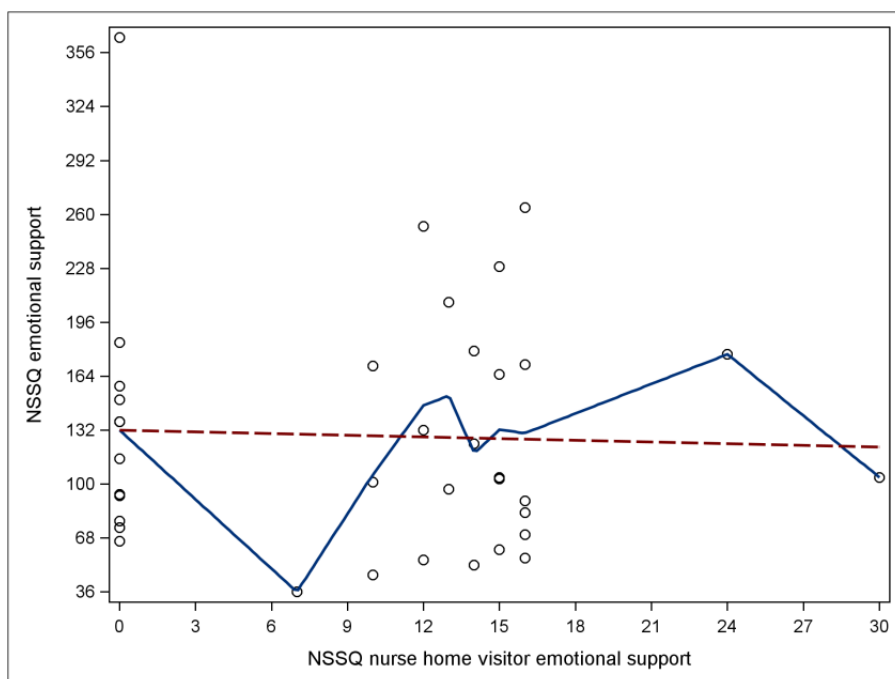


Figure R6. Scatterplot for NSSQ subscales of emotional support and nurse home visitor emotional support.

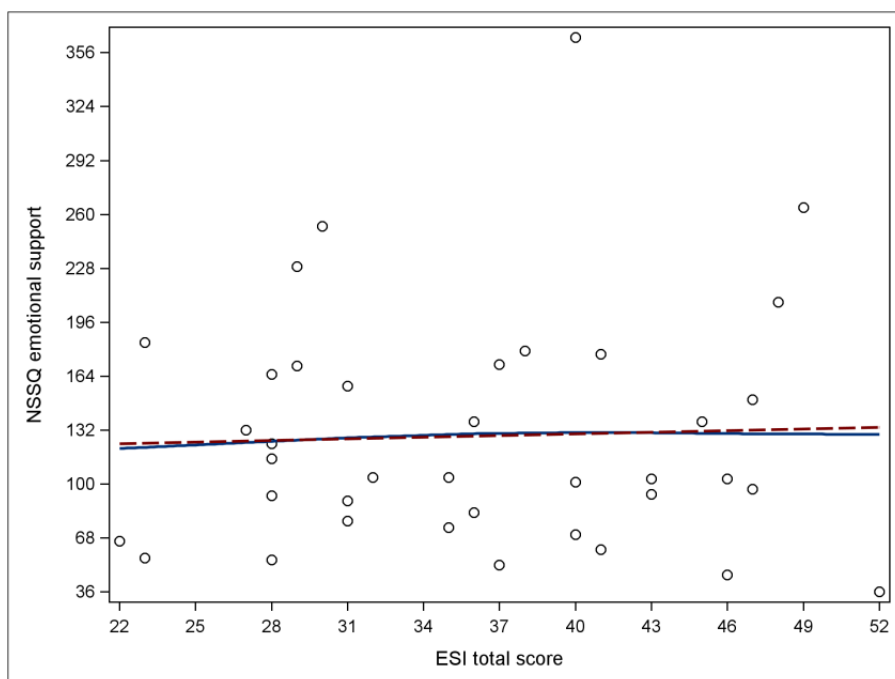


Figure R7. Scatterplot for NSSQ subscales of emotional support and Everyday Stressor's Index total score.

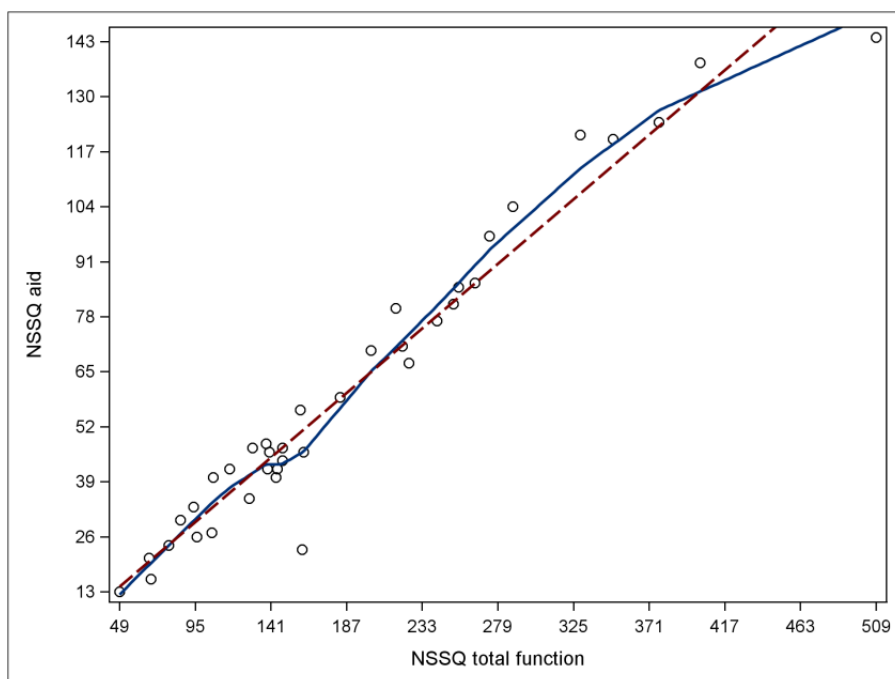


Figure R8. Scatterplot for NSSQ subscales of aid and total function.

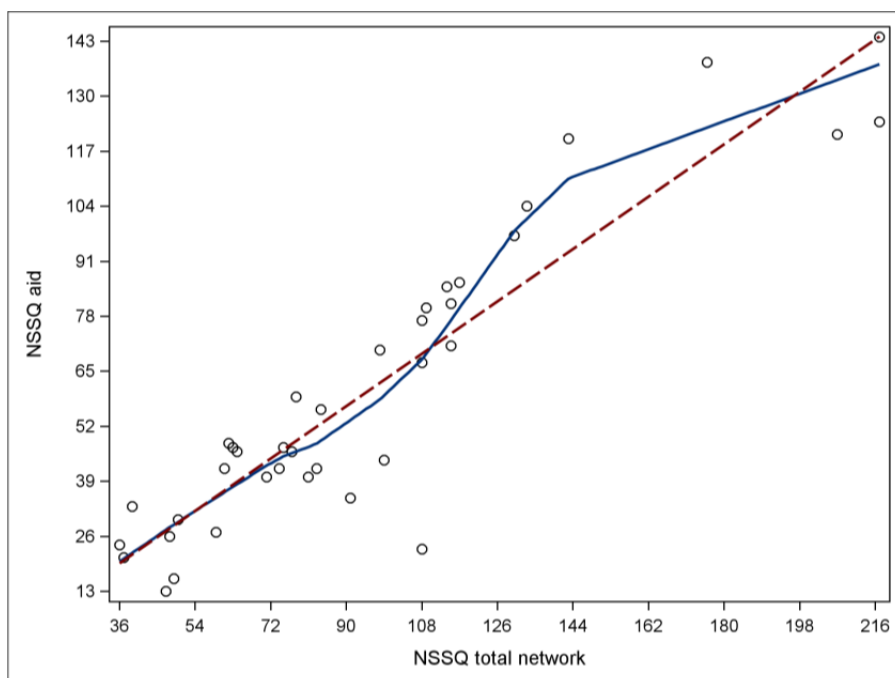


Figure R9. Scatterplot for NSSQ subscales of aid and total network.

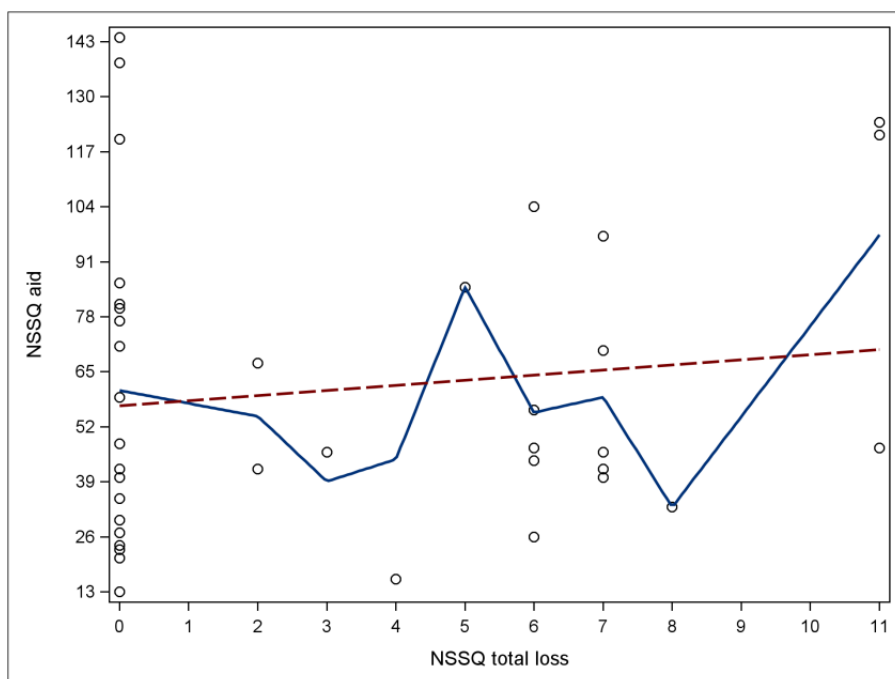


Figure R10. Scatterplot for NSSQ subscales of aid and total loss.

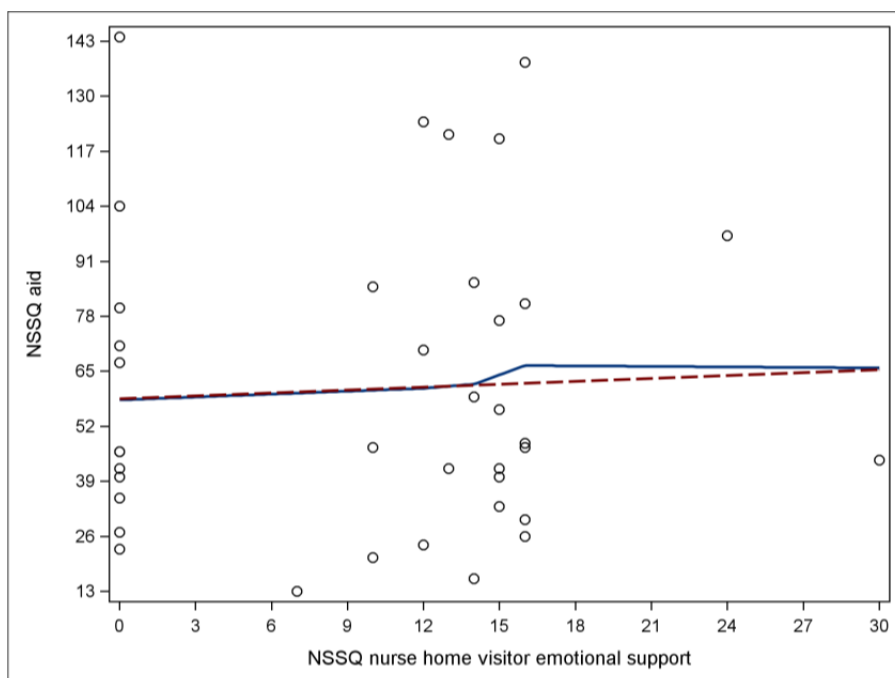


Figure R11. Scatterplot for NSSQ subscales of aid and nurse home visitor emotional support.

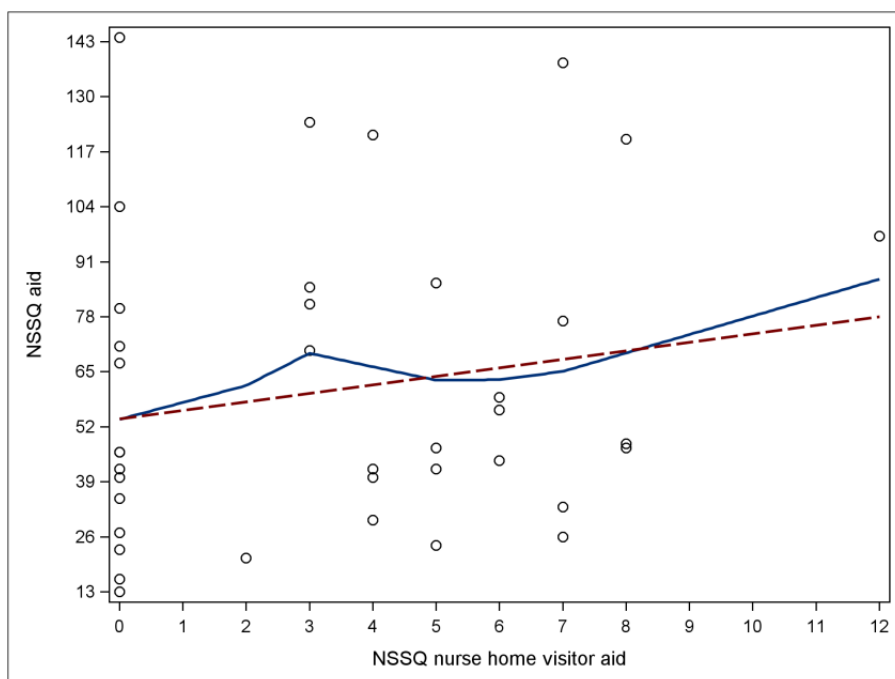


Figure R12. Scatterplot for NSSQ subscales of aid and nurse home visitor aid.

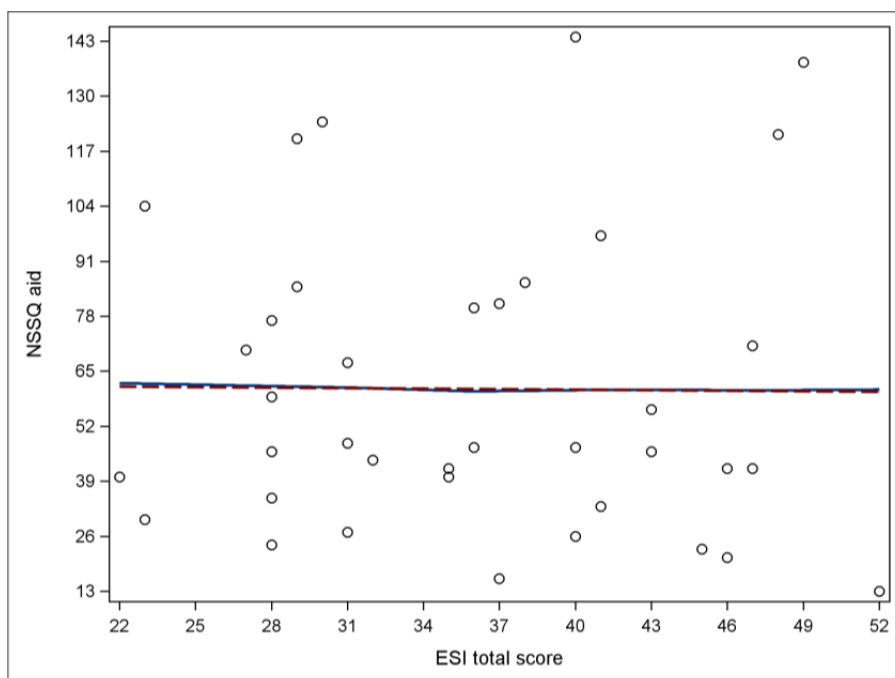


Figure R13. Scatterplot for NSSQ subscale of aid and Everyday Stressors Index total score.

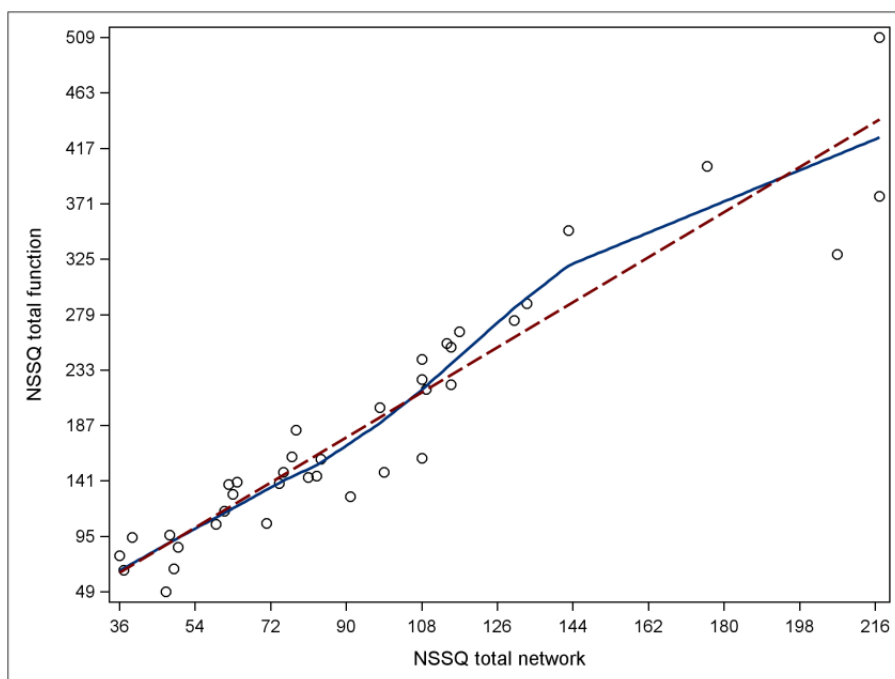


Figure R14. Scatterplot for NSSQ subscales of total function and total network.

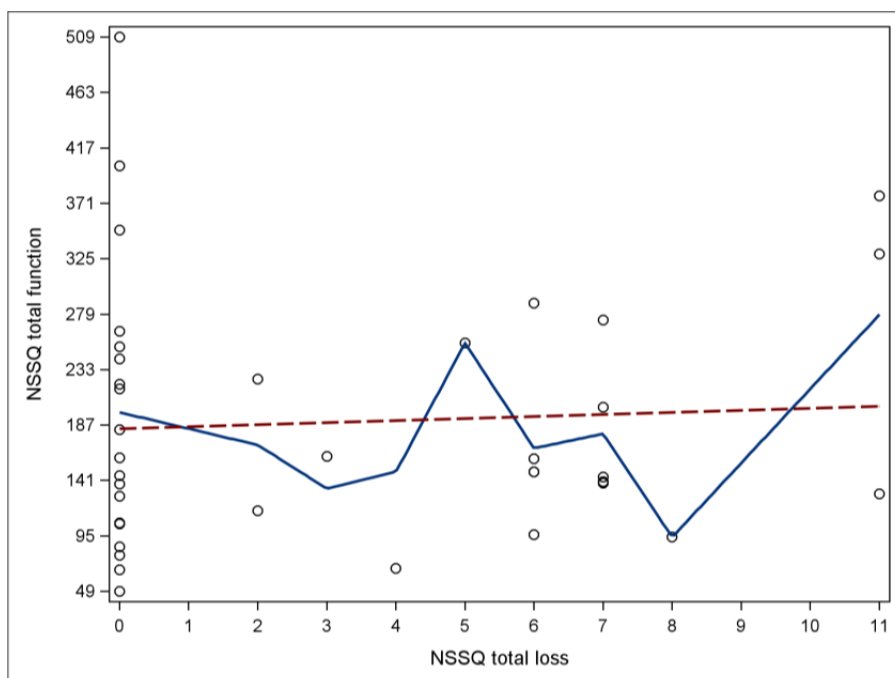


Figure R15. Scatterplot for NSSQ subscales of total function and total loss.

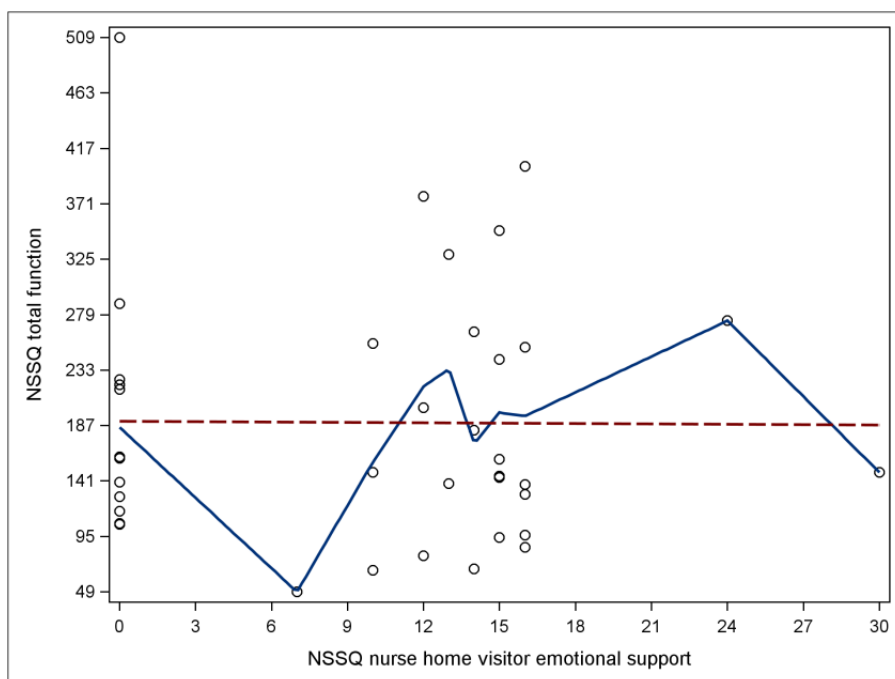


Figure R16. Scatterplot for NSSQ subscales of total function and nurse home visitor emotional support.

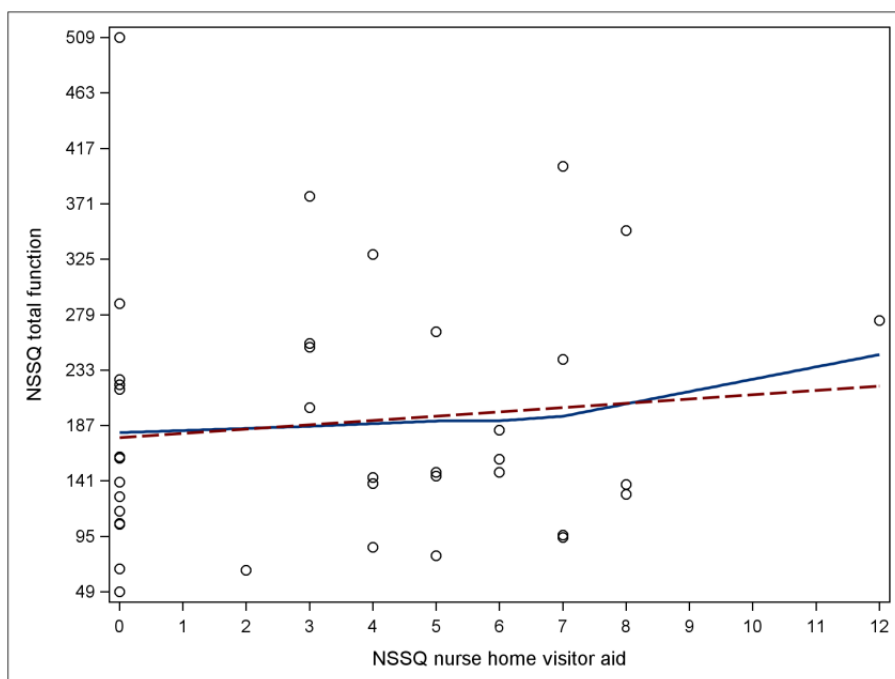


Figure R17. Scatterplot for NSSQ subscales of total function and nurse home visitor aid.

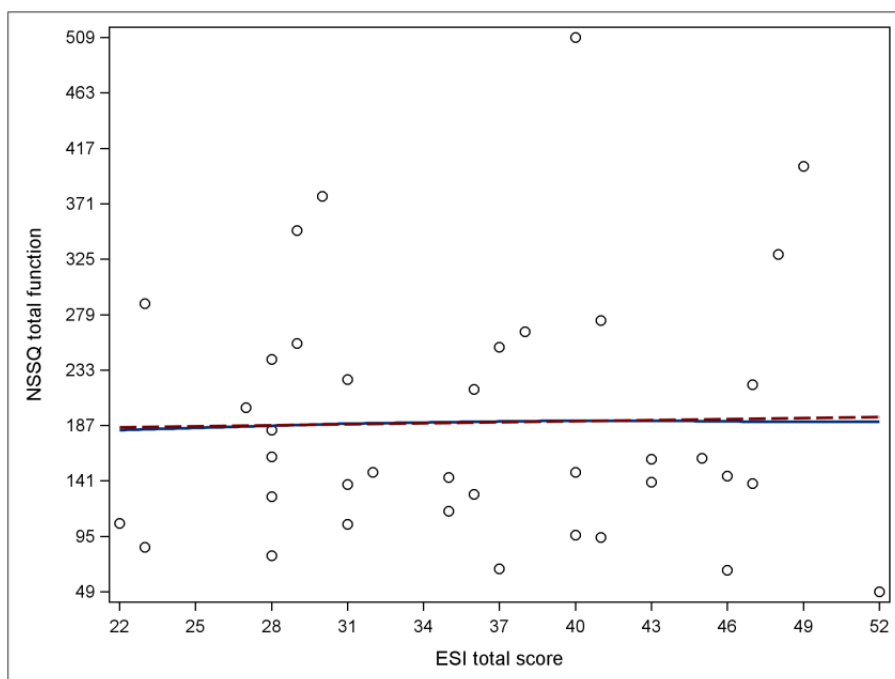


Figure R18. Scatterplot for NSSQ subscale of total function and Everyday Stressors Index total score.

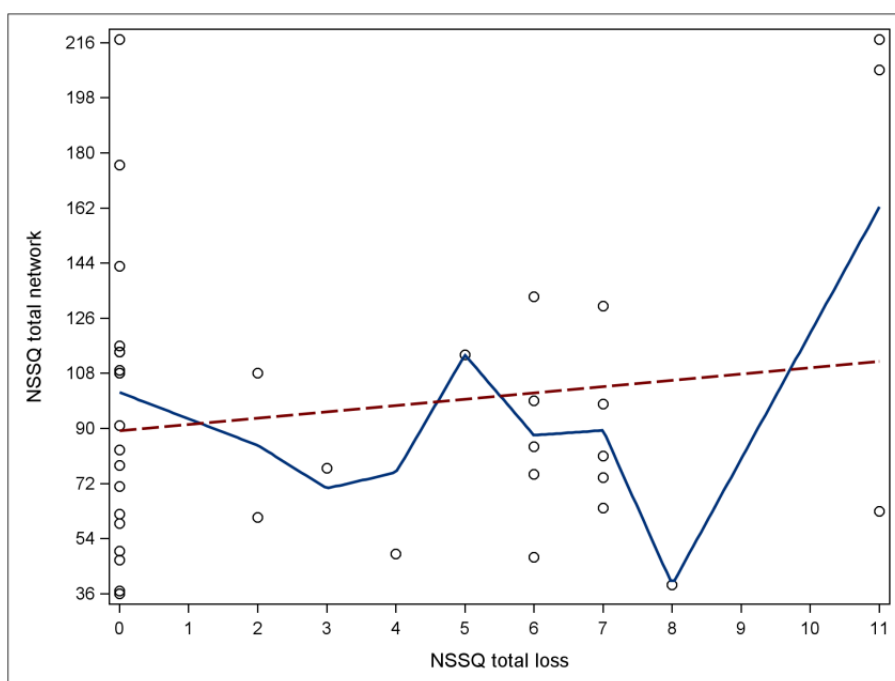


Figure R19. Scatterplot for NSSQ subscales of total network and total loss.

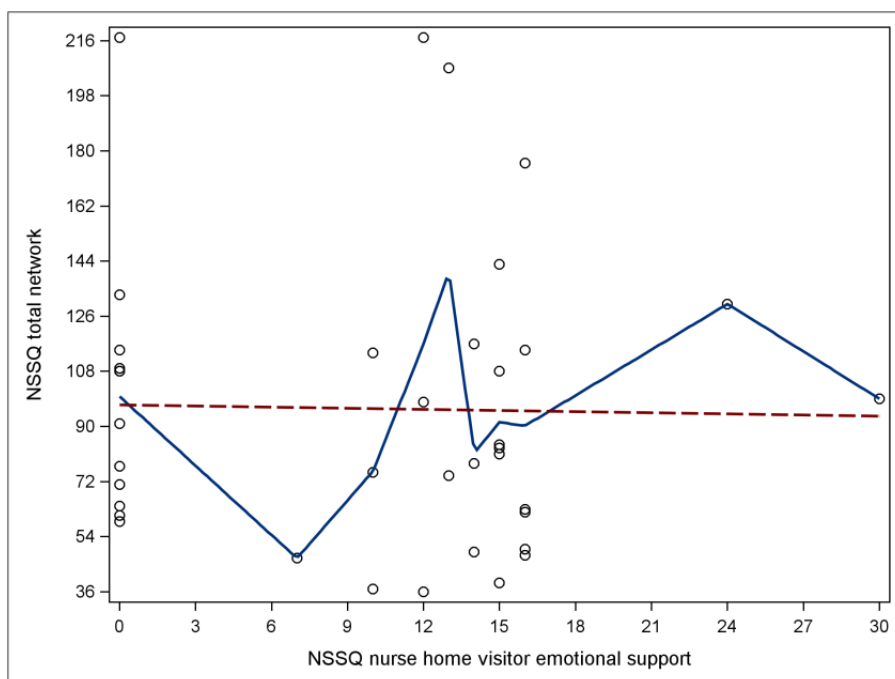


Figure R20. Scatterplot for NSSQ subscales of total network and nurse home visitor emotional support.

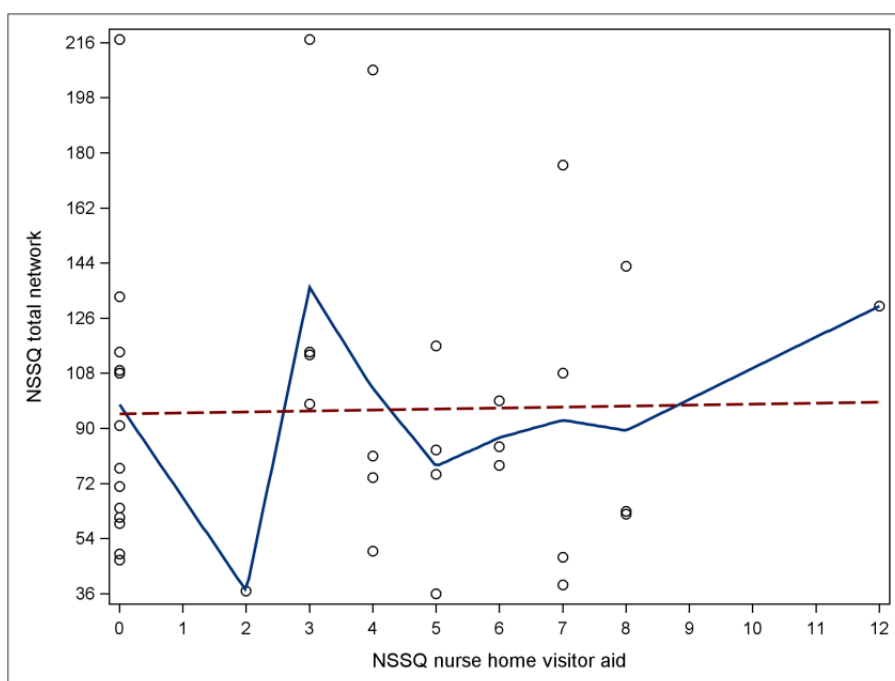


Figure R21. Scatterplot for NSSQ subscales of total network and nurse home visitor aid.

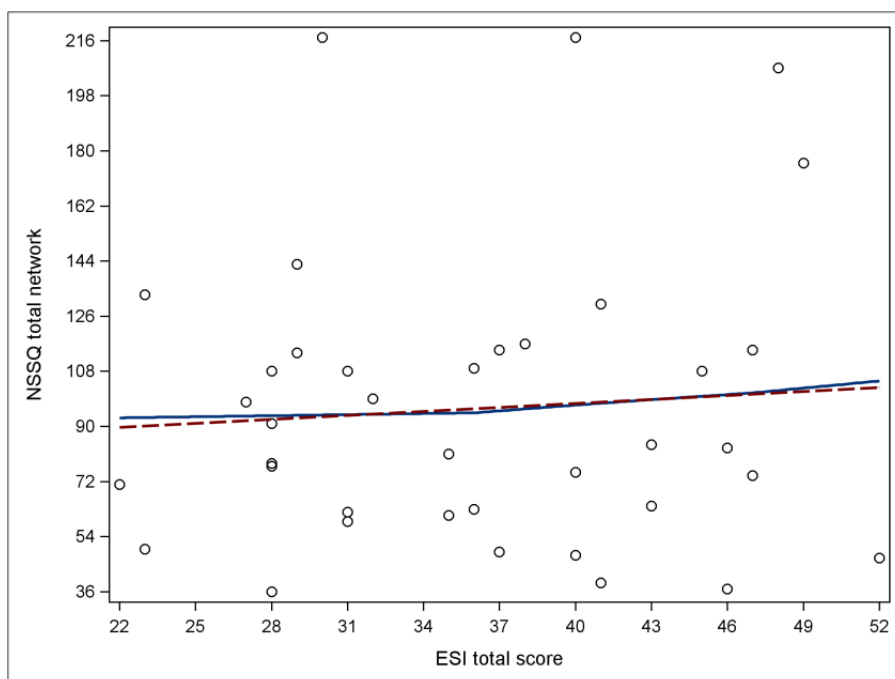


Figure R22. Scatterplot for NSSQ subscale of total network and Everyday Stressors Index total score.

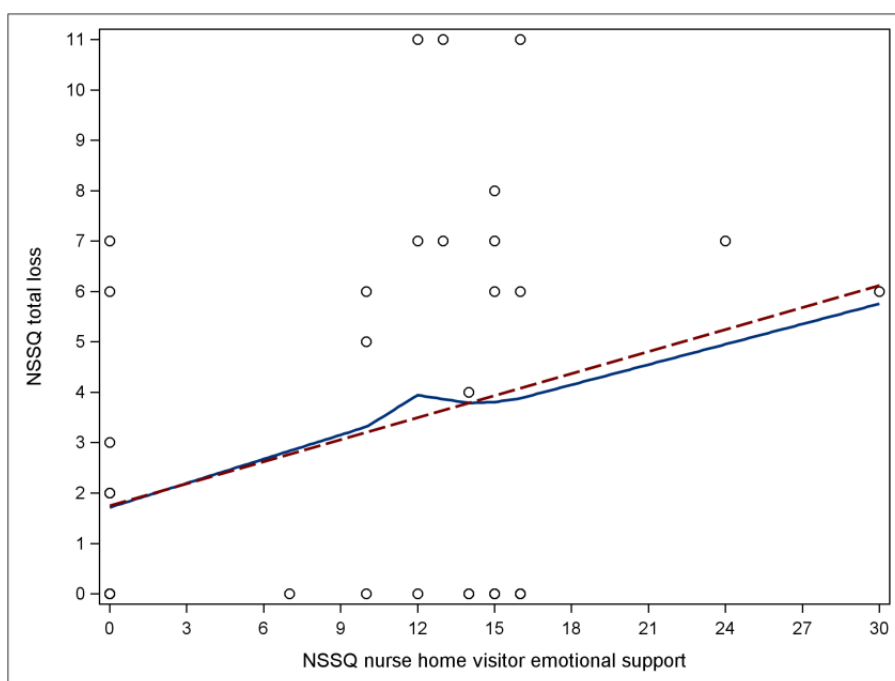


Figure R23. Scatterplot for NSSQ subscales of total loss and nurse home visitor emotional support.

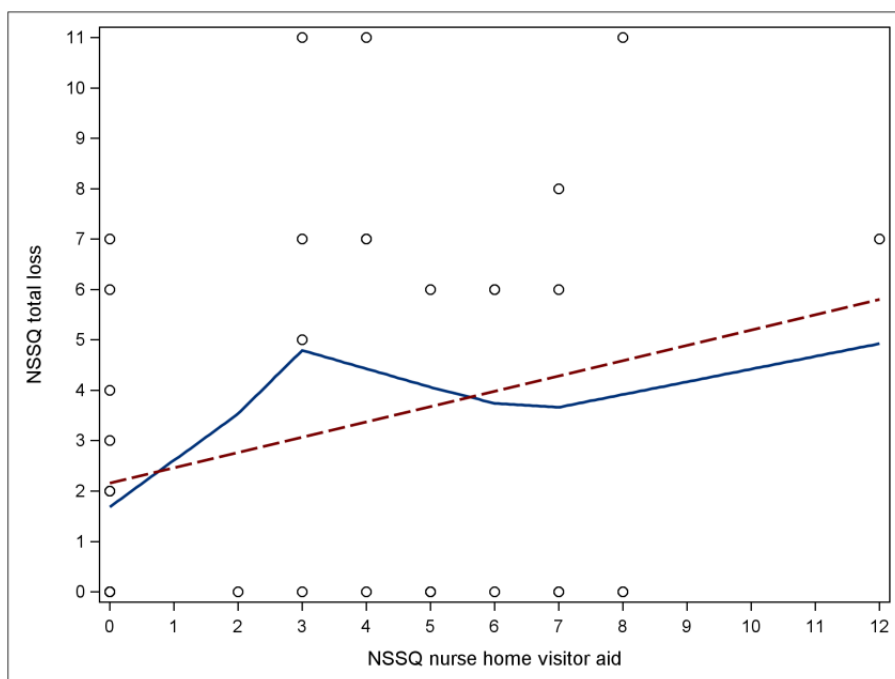


Figure R24. Scatterplot for NSSQ subscales of total loss and nurse home visitor aid.

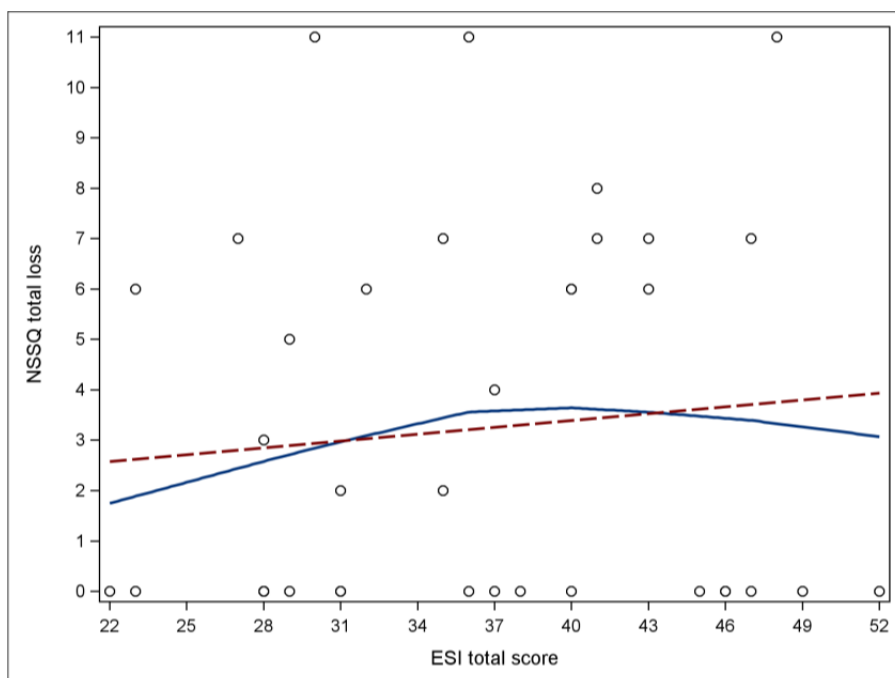


Figure R25. Scatterplot for NSSQ subscale of total loss and Everyday Stressors Index total score.

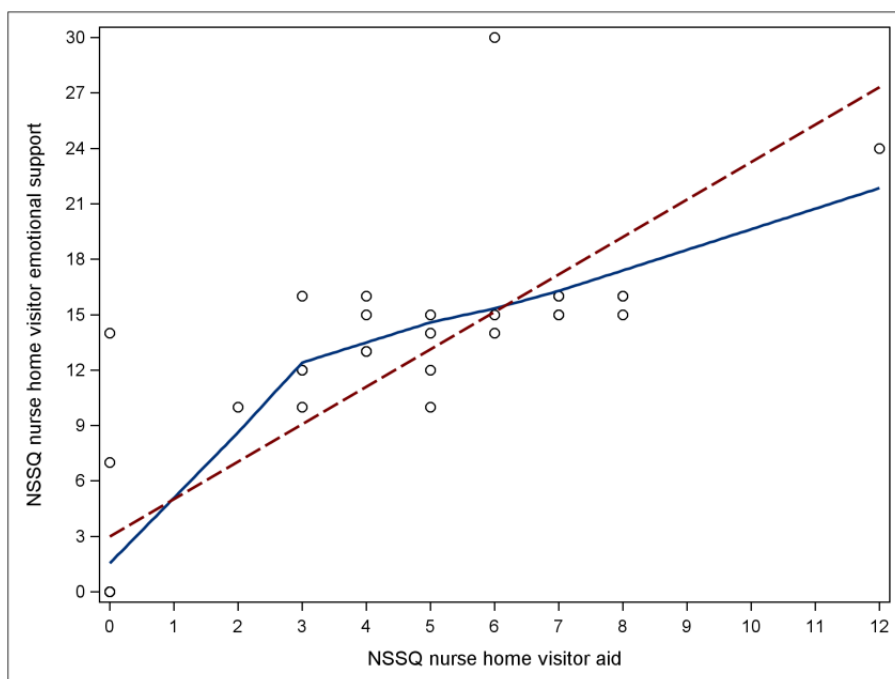


Figure R26. Scatterplot for NSSQ subscales of nurse home visitor emotional support and nurse home visitor aid.

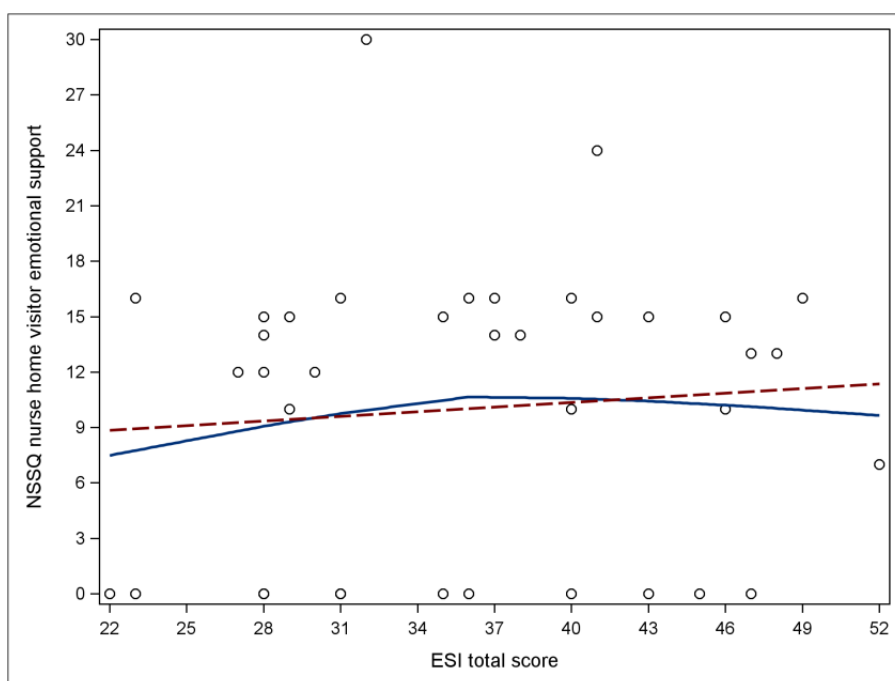


Figure R27. Scatterplot for NSSQ subscale of nurse home visitor emotional support and Everyday Stressors Index total score.

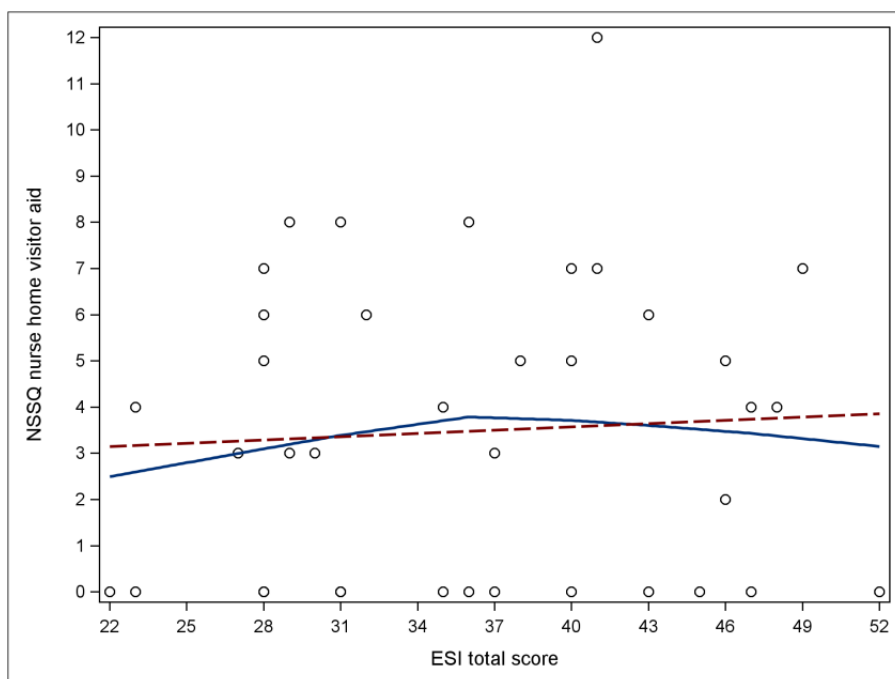


Figure R28. Scatterplot for NSSQ subscale of nurse home visitor aid and Everyday Stressors Index total score.